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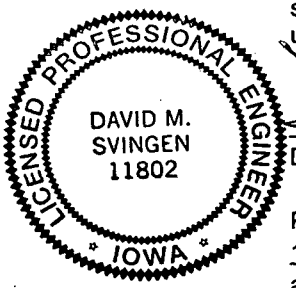
ANNUAL MONITORING REPORT 2004
GROUNDWATER QUALITY AND MONITORING WELL PERFORMANCE

PLYMOUTH COUNTY SANITARY LANDFILL
PLYMOUTH COUNTY, IOWA
FACILITY NO. 75-SDP-1-74P

Terracon Project No. 40905033
November 30, 2004



I hereby certify the portion of this engineering document described below was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

David M. Svingen

David M. Svingen Certificate No. 11802

Pages or sheets covered by this seal: Report pages 1 – 18; Appendix A – Figures 1 – 6; Appendix B; and Appendix C; Tables 1, 2, and 3

Date Issued: November 30, 2004

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Prepared for:

PLYMOUTH COUNTY SOLID WASTE AGENCY
Plymouth County, Iowa

Prepared by:

TERRACON
Omaha, Nebraska

Terracon

Form 101—1-87

November 30, 2004

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Plymouth County Solid Waste Agency
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LeMars, IA 51031-0904

Re: Annual Monitoring Report 2004
Groundwater Quality and Monitoring Well Performance
Plymouth County Landfill
Permit No. 75-SDP-1-74P
Terracon Project No. 40905033

Enclosed is a report for the annual monitoring of groundwater quality and monitoring well performance for the Plymouth County Landfill. This report serves to meet Iowa Department of Natural Resources (IDNR) annual monitoring reporting requirements set forth in IDNR's Regulations for Solid Waste Disposal, Chapter 103. This report does not, however, contain site inspection/special waste authorization information. We understand that site inspection/special waste authorization information is to be reported by Mr. Scott Langel, P.E., the registered design engineer as specified in the landfill's permit (No. 75-SDP-1-74P).

Thank you for the opportunity to be of continued service to you on this project. If there are any questions concerning this report, please contact us.

Sincerely,
TERRACON

Rod Baumann, P.G.
Project Geologist

David M. Svingen, P.E., P.G.
Principal

RMB/DMS:slq/leb

Enclosure

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1.0 INTRODUCTION

The subject site is an existing landfill operating under Iowa Department of Natural Resources (IDNR) permit number 75-SDP-1-74P, in Plymouth County of northwestern Iowa. The Plymouth County Landfill is located within the NE $^1/_4$ of Section 34, in Township 93 North, Range 45 West, in Plymouth County, Iowa and its location is depicted in Figures 1 and 2 (Appendix A).

Landfill personnel have performed water quality sampling and analysis for the 2004 calendar year at the Plymouth County Landfill. Monitoring consisted of sampling and analyzing groundwater from 11 water table monitoring wells (three up-gradient wells and eight down-gradient wells). The wells are depicted in Figure 3 (Appendix A).

Past sampling and analyses have shown well MW-17 to be appropriate for use as an up-gradient well for making statistical comparisons to the remaining wells at the landfill. Until 2004, there had been no evidence of impact to groundwater at MW-17 from the landfill. However, results from the April 30, 2004 monitoring event revealed 1,1,1-trichloroethane (TCA) at a concentration of 1.44 ug/L. Also, the October 11, 2004 monitoring data revealed a specific conductance value that appears to be anomalously high. These data are discussed in more detail in section 3.1. Further monitoring must be conducted to evaluate whether this data will demonstrate the beginning of a long term trend or if the data is anomalous.

Most of the wells at the landfill have been subjected to monitoring for routine annual and semi-annual parameters. Many wells have also been used to monitor for volatile organic compounds (VOCs) in response to a Groundwater Quality Assessment Plan (GWQAP) for assessing the extent of VOCs detected at several wells during previous monitoring. A summary of whether routine annual and semi-annual parameters and/or specified VOC parameters are required for testing at respective wells is provided below.

Well No.	Routine Semi-Annual and Annual Sampling	GWQAP Semi-Annual Sampling for Specified VOCs
MW-7	Required	Required
MW-8	Required	Required
MW-9	Required	Required
MW-10	Required	Not Required
MW-11	Required	Not Required
MW-12	Required	Required
MW-13	Required	Not Required
MW-14	Required	Required
MW-15	Not Required	Required
MW-16	Not Required	Required
MW-17	Required	Required

Note: Wells MW-1 through MW-6 have been abandoned.

Laboratory reports, chain-of-custody documentation, and field data forms have been previously submitted to the IDNR by landfill personnel for each semi-annual monitoring event. Copies of these documents are retained at the Plymouth County Landfill. During 2004, groundwater sampling was performed on April 30 and October 12.

2.0 STATISTICAL CONSIDERATIONS

Monitoring well MW-17 was considered as the up-gradient location in the water quality monitoring program. Statistical evaluation of temperature has not been included since temperature data, to a large degree, is dependent upon ambient conditions. Ambient conditions may cause temperature readings to deviate from actual groundwater conditions as a result of the method used to measure groundwater temperatures. Nevertheless, temperatures recorded during the sampling events do not indicate obvious indications of temperature fluctuations that may be the result of endothermic or exothermic chemical reactions.

Control bounds were computed in general accordance with guidelines set forth in IAC 103.2(6). One-half of the laboratory method detection limit (MDL) was used in statistical computations in instances where chemicals were reported at concentrations below the MDL.

Laboratory analytical summary sheets for each sampling location have been provided in Appendix B. Graphs with control limits showing concentrations versus time for sampling locations are also included in Appendix B. The parameters given statistical consideration include routine semi-annual and annual parameters and select VOC parameters at selected wells as listed below.

Semi-annual Parameters	Annual Parameters	Select VOCs at GWQAP Wells
Chloride	Phenols (Total)	Benzene
Chemical Oxygen Demand	Total Organic Halogens	1,2-Dichloroethane
Iron (dissolved)		1,1-Dichloroethene
Ammonia Nitrogen		Trichloroethene
pH		
Specific Conductance		

It should be noted that GWQAP wells that only require sampling for VOCs have been occasionally sampled for semi-annual and annual parameters, which was not required by the IDNR. Conversely, wells that only require sampling for semi-annual and annual parameters have been occasionally sampled for VOCs, which was not required by the IDNR. The additional data was included in the Appendix B tables, but may or may not be included in the Appendix B graphs.

3.0 GROUNDWATER IMPACT DISCUSSIONS

Discussion in this section is provided for chemical parameters that fall outside of the upper and lower control limits on a well-by-well basis. Chemical parameters which fall within established control limits are not discussed. Well discussions are presented in reverse order of the well number system (i.e. well MW-17 is discussed first and well MW-7 is discussed last) since well MW-17 is the up-gradient well used for statistical comparison to other wells.

Upper and lower control limits for each of the monitoring wells (MW-7 through MW-17) were based on data obtained for up-gradient well MW-17 as required by IAC Chapter 103.2(b). In some cases, upper and lower control limits are equivalent due to non-detection of certain parameters since monitoring began. In this case, analyte concentrations plot on a single control bound line (no deviation from the mean of the data) instead of between upper and lower control bounds.

3.1 MW-17 (Up-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Only one data point (July 1, 1998) plotted above the upper control limit for chloride. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Chemical Oxygen Demand:** One data point (October 6, 2002) plotted above the upper control limit for chemical oxygen demand. Compared to the other data points

on the graph, this data point and the data point of April 3, 2003 appear to be anomalous and not consistent with other monitoring data.

- **1,1,1-Trichloroethane (TCA):** One recent data point (April 30, 2004) for detected TCA has resulted in the formation of an upper and lower control limit for this chemical in the Appendix B graphs. However, the TCA concentration does not exceed the MCL groundwater action level of 200 ug/l. TCA is not a required VOC parameter for GWQAP monitoring but, in late 2003 and 2004, TCA was inadvertently included in the list of laboratory analytes. TCA monitoring has not been required since first year quarterly monitoring was conducted back in 1997-98. Continued monitoring will allow for further assessment of potential impact.

- **pH:** Only one data point (October 17, 2000) plotted below the lower control limit for pH. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Specific Conductance:** Only one data point (October 11, 2004) plotted above the upper control limit for specific conductance. Compared to the other data points on the graph, the marginal exceedance above the upper control limit is not considered to be significant.

3.2 MW-16 (Up-Gradient Well)

Well MW-16 is a GWQAP well installed for monitoring certain VOC compounds. Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Trichloroethene (TCE):** Only one data point (April 30, 2004) plotted above the upper control limit for TCE. However, the detected TCE concentration is below the maximum contaminant level (MCL) drinking water standard of 5 ug/l and also appears to be anomalous with respect to other TCE data. Continued monitoring will allow for further assessment of potential TCE impact at well MW-16.

- **Specific Conductance:** Only one data point (April 30, 2004) plotted above the upper control limit for specific conductance. Compared to the other data points on the graph, this data point and the October 12, 2004 data point appear to be anomalous and not consistent with other monitoring data. However, continued monitoring will allow for further assessment of potential impact.

3.3 MW-15 (Down-Gradient Well)

Well MW-15 is a GWQAP well installed for monitoring certain VOC compounds. Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Trichloroethene (TCE):** Data has consistently plotted above the upper control limit for TCE since September of 1999 with the exception of one data point (April 30, 2004). It appears that TCE is present in groundwater at well MW-15. However, the detected TCE concentrations are below the maximum contaminant level (MCL) drinking water standard of 5 ug/l.

- **Total Organic Halogens (TOH):** The two test results for this analyte indicate impact to groundwater which is consistent with the detection of TCE discussed above. Note that TOH is a routine annual parameter not required to be tested in groundwater collected from MW-15.

- **Specific Conductance:** With the exception of what appears to be erroneous data for October 24, 2001, April 28, 2002, and October 11, 2004, data for this analyte plotted consistently above the upper control bound established by up-gradient well MW-17. Based on indications of groundwater impact by TCE, as stated above, the elevated chloride concentrations may be indicative of impact from the landfill.

3.4 MW-14 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Each of the data points plotted above the upper control limit for chloride. Based on other indications of groundwater impact at well MW-14 (i.e. VOCs), the elevated chloride concentrations may be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** The July 12, 1996 data point plotted above the upper control limit for chemical oxygen demand. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data. More recent data, within the last two years, reveals two data points plotting above the upper control limit. The recent chemical oxygen demand detections may be indicative of VOC groundwater impact.

- **Ammonia Nitrogen:** The April 30, 2004 data point plotted above the upper control limit for ammonia nitrogen. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Dissolved Iron:** The March 25, 2001 data point plotted above the upper control limit for dissolved iron. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Benzene:** Benzene had not been detected at MW-14. Two early data points plot above the upper control bound limit because the laboratory detection levels were elevated for these sample dates. However, a recent data point (April 30, 2004) plots above the upper control bound but appears to be anomalous with respect to other analytical data. Also, the anomalous data point concentration is below the maximum contaminant level (MCL) of 5 ug/l.

- **1,2-Dichloroethane (DCA):** Six data points plot above the upper control limit for DCA. One of the exceedances is due to elevated laboratory detection limits. However, five exceedances were due to detections of DCA marginally above detection limits which are above the negligible risk level (NRL) of 0.4 ug/l but below the maximum contaminant level (MCL) of 5 ug/l.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-14. Two early data points plot below the lower control bound limit because the laboratory detection levels were lower for these sample dates relative to subsequent data analyses.

- **1,1,1-Trichloroethane (TCA):** Three data points plot above the upper control limit for TCA. However, TCA concentrations do not exceed the MCL groundwater action level of 200 ug/l. TCA is not a required VOC parameter for GWQAP monitoring. The first two data points for MW-14 are historic data obtained through early quarterly background monitoring. In 2004 TCA was inadvertently included in the list of laboratory analytes and was found to exceed the upper control limit in October 2004.

- **Trichloroethene (TCE):** Most of the data points plot above the upper control limit for TCE. However, none of the data points exhibited a concentration exceeding the MCL groundwater action level of 5 ug/l.

- **Total Organic Halogens (TOH):** Most of the data points plot above the upper control limit for TOH. These results are consistent with VOC detections as stated above.

- **Specific Conductance:** Most of the data points plotted above the upper control limit for specific conductance. Based on other indications of groundwater impact at well MW-14 (i.e. VOCs), the elevated specific conductance concentrations may be indicative of impact from the landfill.

3.5 MW-13 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Each of the data points plotted above the upper control limit for chloride. Based on other indications of groundwater impact at well MW-13 (i.e. arsenic from quarterly background monitoring not covered in this report), the elevated chloride concentrations may be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** Six data points plot above the upper control limit for chemical oxygen demand. Based on other indications of groundwater impact at well MW-13, the data may be indicative of impact from the landfill.

- **Ammonia Nitrogen:** The April 12, 2000 data point plotted above the upper control limit for ammonia nitrogen. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Iron:** Many of the data points plotted above the upper control limit for iron. Based on other indications of groundwater impact at well MW-13 (i.e. arsenic from quarterly background monitoring not covered in this report and chloride), the elevated iron concentrations may be indicative of impact from the landfill.

- **Benzene:** Benzene was not detected at MW-13. Two early data points plot above the upper control bound limit because the laboratory detection levels were elevated for these sample dates.

- **1,2-Dichloroethane (DCA):** DCA was not detected at MW-13. One data point plotted above the upper control limit for DCA. The exceedance is due to elevated laboratory detection limits.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-13. Two early data points plot below the lower control bound limit because the laboratory detection levels were lower for these sample dates relative to subsequent data analyses.

- **Total Organic Halogens (TOH):** TOH was detected for two of the past nine monitoring events when TOH was analyzed. Specific VOCs have not been detected in groundwater at MW-13. Continued monitoring will allow for further assessment of potential TOH impact at well MW-13.

- **Specific Conductance:** Two of the data points plotted above the upper control limit for specific conductance. However, the suspect specific conductance concentrations do not grossly exceed the upper control limit.

3.6 MW-12 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Each of the data points plotted above the upper control limit for chloride. Based on other indications of groundwater impact at well MW-12 (i.e. VOCs and total organic halogens), the elevated chloride concentrations appear to be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** Five data points plotted above the upper control limit for specific conductance. Compared to the other data points on the graph, these data points appear to be anomalous and not consistent with other monitoring data.

- **Ammonia Nitrogen:** The October 19, 1998 data point plotted above the upper control limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Benzene:** Each of the data points plot above the upper control limit for benzene with the exception of one (April 30, 2004). One of the data points exceeded the control limit because of an elevated laboratory detection limit. The other exceedances were due to detections of benzene at concentrations which are above the negligible risk level (NRL) groundwater action level of 1.0 ug/l but below the maximum contaminant level (MCL) of 5 ug/l.

- **1,2-Dichloroethane (DCA):** The April 30, 2004 data point plotted above the upper control limit for DCA. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-12. One early data point plots below the lower control bound limit because the laboratory detection levels were lower for this sample date relative to subsequent data analyses.

- **1,1,1-Trichloroethane (TCA):** Three data points plot above the upper control limit for TCA. However, TCA concentrations do not exceed the maximum contaminant level (MCL) groundwater action level of 200 ug/l. TCA is not a required VOC parameter for GWQAP monitoring. Most of the TCA data for MW-12 is historic data obtained through early quarterly background monitoring.

- **Trichloroethene (TCE):** Each data point plots above the upper control limit for TCE. Many of these data points exhibited a concentration exceeding the negligible risk level (NRL) of 3 ug/l and the maximum contaminant level (MCL) of 5 ug/l, but only marginally.

- **Total Organic Halogens (TOH):** Each of the data points plot above the upper control limit for TOH. These results are consistent with VOC detections as stated above.

- **pH:** One data point exhibited a pH value of 5.0 and plotted below the lower control limit for pH. The 5.0 pH value appears to be anomalously low and not consistent with other measured pH values. Other measured pH values are between control limits with the exception of three pH values which plot at or marginally below the lower control limit.

- **Specific Conductance:** Most of the data points plotted above the upper control limit for specific conductance. Based on other indications of groundwater impact at well MW-12 (i.e. VOCs and total organic halogens), the elevated specific conductance concentrations appear to be indicative of impact from the landfill.

3.7 MW-11 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** All of the data points plotted above the upper control limit for chloride The elevated chloride concentrations may be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** One data point plots above the upper control limit for specific conductance. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Ammonia Nitrogen:** The October 11, 2004 data point plotted above the upper control limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Iron:** The July 12, 1996 data point plotted above the upper control limit. Compared to the other data points on the graph, the suspect data point appears to be anomalous and not consistent with other monitoring data. Continued monitoring subsequent to the July 12, 1996 date indicates that iron concentrations at MW-11 have not been detected.

- **Benzene:** Benzene was not detected at MW-11. Two early data points plotted above the upper control bound limit because the laboratory detection levels were elevated for these sample dates.

- **1,2-Dichloroethane (DCA):** DCA was not detected at MW-11. One early data point plotted above the upper control bound limit because the laboratory detection level was elevated for that sample date.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-11. Two early data points plotted below the lower control bound limit because the laboratory detection levels were lower for these sample dates relative to subsequent data analyses.

- **Total Organic Halogens (TOH):** Two early data points plot above the upper control limit for TOH. Continued monitoring subsequent to these dates indicates that TOH concentrations at MW-11 have not been detected.

- **Specific Conductance:** Several data points plotted above the upper control limit for specific conductance. The elevated specific conductance concentrations may be indicative of impact from the landfill.

3.8 MW-10 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Each of the data points plotted above the upper control limit for chloride. Based on total organic halogen detections as discussed below, the elevated chloride concentrations appear to be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** Values which plot above the upper control limit for chemical oxygen demand appear to be anomalous.

- **Ammonia Nitrogen:** The August 9, 1996 data point plotted above the upper control limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data. Continued monitoring subsequent to August 9, 1996 indicates that ammonia nitrogen concentrations at MW-10 have not been detected.

- **Iron:** The April 17, 1997 data point plotted above the upper control limit. Other data points on the graph did not exhibit detectable iron concentrations. The one time detection of iron in well MW-10 appears to be anomalous.

- **Benzene:** Benzene was not detected at MW-10. Two early data points plotted above the upper control bound limit because the laboratory detection levels were elevated for these sample dates.

- **1,2-Dichloroethane (DCA):** DCA was not detected at MW-10. One early data point plotted above the upper control limit because the laboratory detection level was elevated for that sample date.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-10. Two early data points plotted below the lower control bound limit because the laboratory detection levels were lower for these sample dates relative to subsequent data analyses.

- **Trichloroethene (TCE):** One data point plotted above the upper control limit for TCE. However, the elevated TCA concentration does not exceed the negligible risk level (NRL) of 3 ug/l or the maximum contaminant level (MCL) of 5 ug/l and also appears to be anomalous with respect to the other non-detectable TCE concentrations.

- **Phenols:** The earliest data point plotted above the upper control bound established by up-gradient well MW-17 for total phenols. This detected phenol concentration appear to be anomalous.

- **Total Organic Halogens (TOH):** Most of the data points plot above the upper control limit for TOH. These results appear to be indicative of landfill impact to groundwater.

- **Specific Conductance:** Most of the data points plotted near the upper control limit and several plotted above the upper control limit for specific conductance. The elevated specific conductance concentrations appear to be indicative of impact from the landfill.

3.9 MW-9 (Down-Gradient Well)

Well MW-9 had not produced a sufficient amount of water for sampling since 1999. In October 2004, water was sampled in MW-9 for the first time since 1999. The discussion below is based on data generated through monitoring which occurred between 1996 and 1999 and October of 2004. Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Each of the data points plotted above the upper control limit for chloride. Based on detections of VOCs and total organic halogens, as stated below, the elevated chloride concentrations appear to be indicative of impact from the landfill.

- **Ammonia Nitrogen:** The October 11, 2004 data point plotted above the upper control limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data.

- **Benzene:** Benzene was not detected at MW-9. One early data point plotted above the upper control bound limit because the laboratory detection levels were elevated for that sample date.

- **1,2-Dichloroethane (DCA):** Four data points plot above the upper control limit for DCA. The exceedances were due to detections of DCA either at or marginally above the negligible risk level (NRL) of 0.4 ug/l. The exceedances are, however, below the maximum contaminant level (MCL) of 5 ug/l.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-9. One early data point plotted below the lower control bound limit because the laboratory detection level was lower for this sample date relative to subsequent data analyses.

- **Phenols:** The earliest of three phenol data points plotted above the upper control limit for phenol. Further monitoring is necessary to evaluate whether this detection is anomalous or if future detections indicate phenol impact to groundwater at well MW-9.

- **Total Organic Halogen (TOH):** Two of three data points plot above the upper control limit for TOH. These results are consistent with DCA detections as stated above.

- **Specific Conductance:** Each of the data points plotted above the upper control limit for specific conductance with the exception of the recent October 11, 2004 data point. Based on other indications of groundwater impact at well MW-9 (i.e. select VOCs and total organic halogens), the elevated specific conductance concentrations appear to be indicative of impact from the landfill.

3.10 MW-8 (Down-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** All of the data points plotted above the upper control limit for chloride Based on detections of VOCs and TOH at this well, as discussed below, the elevated chloride concentrations appear to be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** Two data points plotted marginally above the upper control limit. These data points and several other COD detections in well MW-8 are not considered to be significant at this time.

- **Ammonia Nitrogen:** The April 30, 2004 data point plotted above the upper control limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data. Future monitoring should provide an indication whether this is an anomalous point or is indicative of impact from the landfill.

- **Iron:** Four data points plotted marginally above the upper control limit. Other data points on the graph did not exhibit detectable iron concentrations. It is difficult to state whether the iron data indicates impact to groundwater from the landfill although recent monitoring data does not indicate impact from the landfill.

- **Benzene:** Most of the data points plot above the upper control limit for benzene. The exceedances were due to detections of benzene which are above the negligible risk level (NRL) of 1.0 ug/l but below the maximum contaminant level (MCL) of 5 ug/l.

- **1,2-Dichloroethane (DCA):** Most of the data points plot above the upper control limit for DCA. The exceedances were due to detections of DCA which are above the

negligible risk level (NRL) of 0.4 ug/l but below the maximum contaminant level (MCL) of 5 ug/l.

- **1,1-Dichloroethene (DCE):** The October 11, 1996 data point plotted above the upper control bound limit. Compared to the other data points on the graph, this data point appears to be anomalous and not consistent with other monitoring data. Continued monitoring subsequent to the October 11, 1996 sampling date indicates that DCE concentrations at MW-8 have not been detected.

- **Trichloroethene (TCE):** All data points plotted above the upper control limit for TCE. The exceedances were due to detections of TCE which are above the negligible risk level (NRL) of 3.0 ug/l and above the maximum contaminant level (MCL) of 5.0 ug/l but appear to be exhibiting a decreasing trend.

- **Phenols:** The earliest phenol data point plotted above the upper control limit for phenol. It appears that the detected phenol concentration may be anomalous.

- **Total Organic Halogen (TOH):** Each of the data points plot above the upper control limit for TOH. These results are consistent with DCA and TCE detections as stated above.

- **Specific Conductance:** Most of the data points plotted above the upper control limit for specific conductance. Based on other indications of groundwater impact at well MW-8 (i.e. VOCs and total organic halogens), the elevated specific conductance concentrations may be indicative of impact from the landfill.

3.11 MW-7 (Up-Gradient Well)

Analytes whose concentrations fall outside of the control limits established from up-gradient well MW-17 are as follows:

- **Chloride:** Many chloride data points plot marginally above the upper control limit for chloride. This marginal exceedence may be indicative of impact from the landfill.

- **Chemical Oxygen Demand:** The July 12, 1996 data point plotted above the upper control limit. The elevated chemical oxygen demand value appears to be anomalous and not consistent with other monitoring data. More recent data indicates chemical oxygen demand detections that are plotted marginally above the upper control limit, which are not considered significant at this time.

- **Ammonia Nitrogen:** Two recent data points plot above the upper control bound but are not consistent with other data which indicates ammonia has not been detected. Future monitoring should provide an indication whether these are anomalous points or are indicative of impact from the landfill.

- **Iron:** Three data points plotted marginally above the upper control limit for iron. Other data points on the graph did not exhibit detectable iron concentrations. It is not clear whether the iron data indicates impact to groundwater from the landfill.

- **Benzene:** Two early data points plotted above the upper control limit for benzene because the laboratory detection levels were elevated for these sample dates. Many later data points also plotted above the upper control limit due to detections of benzene which are at or below the negligible risk level of 1.0 ug/l and below the maximum contaminant level of 5.0 ug/l.

- **1,2-Dichloroethane (DCA):** Two early data points plotted above the upper control limit. The elevated DCA values appear to be anomalous and not consistent with other monitoring data. Continued monitoring subsequent to the elevated data points indicates that DCA concentrations at MW-7 have not been detected.

- **1,1-Dichloroethene (DCE):** DCE was not detected at MW-7. However, two early data points plotted below the lower control bound limit because the laboratory detection level was lower for these sample dates relative to subsequent data analyses.

- **Trichloroethene (TCE):** Each data point plotted above the upper control limit for TCE. The exceedances were due to detections of TCE which are above the negligible risk level of 3.0 ug/l and above the maximum contaminant level (MCL) of 5.0 ug/l.

- **Total Organic Halogen (TOH):** Each of the data points plotted above the upper control limit for TOH. These results are consistent with TCE detections as stated above.

- **pH:** A single data point (March 12, 2000) plots below the lower control limit, but is not a significant deviation from the control bounds.

- **Specific Conductance:** Each of the data points plotted above the upper control limit for specific conductance. Based on other indications of groundwater impact at

well MW-7 (i.e. VOCs and total organic halogens), the elevated specific conductance concentrations appear to be indicative of impact from the landfill.

4.0 MONITORING WELL PERFORMANCE

The current site monitoring instruments were evaluated in general accordance with the approved Hydrologic Monitoring System Plan, dated October 23, 1998. The purpose of this evaluation was to assess whether the integrity of groundwater monitoring instruments is sufficient to adequately monitor groundwater at the landfill as described in the approved HMSP.

4.1 Well Location Evaluation [110.9(2)a]

For the 2004 calendar year, groundwater elevation measurement events for 11 water table monitoring wells (see Figure 3, Appendix A) were conducted monthly by landfill personnel. The results of these events have been tabulated in Table 1 (Appendix C).

Water levels at individual wells have exhibited seasonal fluctuations over the past year. As can be seen from Table 1 (Appendix C), water levels were measured to be within the screened interval at most monitoring wells during calendar year 2004.

Exceptions include water levels measured at MW-9 where this well was observed to be dry from December 2003 through April 2004, indicating that the water table dropped below the well screen interval. Although well MW-9 has not been used for monitoring for several years because it has been dry since 1999, the seasonal water table levels have recently risen above the base of the screened interval at MW-9 making it, once again, a useful monitoring point. Due to the rise in the seasonal water table, water levels rose above the screened interval at several wells including MW-17 (May – November); MW-12 (June and July); MW-11 (October and November); and MW-7 (July – November). The water levels rose to maximums of 2.8 feet above the top of the well screen at MW-17; two feet at MW-12; 0.7 feet at MW-11; and 2.3 feet at MW-7.

Ideally, water levels should be within the screened interval for water table monitoring wells, particularly to monitor for the presence of light non-aqueous phase liquids (LNAPLs) which collect at the water table surface. However, evidence to indicate the presence of NAPLs at the monitoring wells was not observed in 2004. As long as such evidence of NAPL presence is not observed when the water table is within a few feet above the top of the screened interval, the well will suffice as a viable groundwater monitoring point.

The general direction of groundwater flow was evaluated for each month's data. The general groundwater flow direction has not changed since groundwater flow was assessed in 1991 for the hydrogeologic assessment. To demonstrate this finding, water level data from three

arbitrarily selected monitoring dates was used to construct water table contour maps (Figures 4, 5, and 6, Appendix A). The inferred groundwater flow direction shown on these maps is similar to the inferred groundwater flow direction depicted on maps presented in the hydrogeologic assessment report and previous annual groundwater monitoring reports.

Based on the above findings, the monitoring wells' positioning, with respect to well depth (vertical) and also with respect to location along the buried waste perimeter (lateral), continues to be adequate. Up-gradient and down-gradient well designations as described in the HMSP should continue to be used.

4.2 Effects of Landfill Operations on Hydrogeologic Setting [110.9(2)b]

Methods for landfilling of solid waste throughout 2004 have not varied significantly from original landfilling methods employed when landfilling commenced in 1975. Based on groundwater information discussed above in Section 4.1, it does not appear that landfill operations are altering the hydrogeologic setting at the landfill site.

4.3 Well Sedimentation [110.9(2)c]

According to the approved HMSP, well depths need to be measured annually to evaluate if the wells are physically intact and not filling with sediment. Well depths were measured during semi-annual monitoring events and recorded on IDNR form 542-1322 which accompanied semi-annual analytical reports submitted to the IDNR and retained at the landfill. The results of these measurements, when compared with well depths depicted on boring logs included in the hydrogeologic assessment report (dated April 26, 1991) and the HMSP (dated October 23, 1998), show that significant silting of site monitoring instruments has not occurred.

4.4 Periodic In-Situ Permeability Tests [110.9(2)d]

According to the approved HMSP, hydraulic conductivities are to be evaluated at monitoring instruments once every five years. Hydraulic conductivity evaluation of the monitoring instruments was performed during 1991, 1998, and 2003. Summaries of hydraulic conductivity testing are documented in Table 3 (Appendix C). Continued hydraulic conductivity testing is not scheduled to take place until 2008.

5.0 LEACHATE WELL MONITORING

Leachate levels were measured monthly by landfill personnel during 2004 with the exception of April. May, and October. Results of leachate measurements made at leachate wells (LW-1, LW-2, LW-3, and LW-4) are summarized in Table 2 (Appendix C). Locations of leachate wells are depicted in Figure 3 (Appendix A).

Leachate was detected in each of the four leachate wells during the year. The most significant leachate thicknesses were measured in well LW-3 from June through November when leachate levels were measured on the order of four to six feet.

6.0 GENERAL COMMENTS

The analysis and opinions expressed in this report are based upon data obtained from the monitoring wells installed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations in subsurface chemistry, stratigraphy, or geohydrology which may occur between borings or across the site. Actual subsurface conditions may vary and may not become evident without further exploration.

This report is prepared for the exclusive use of the Plymouth County Solid Waste Agency for specific application to the project discussed and has been prepared in accordance with generally accepted environmental engineering practices. No warranties, either express or implied, are intended or made. In the event any changes in the nature or location of observed conditions as outlined in this report are found, this report cannot be considered valid unless these changes are reviewed and the opinions of this report are modified or verified in writing by Terracon.

Appendix A

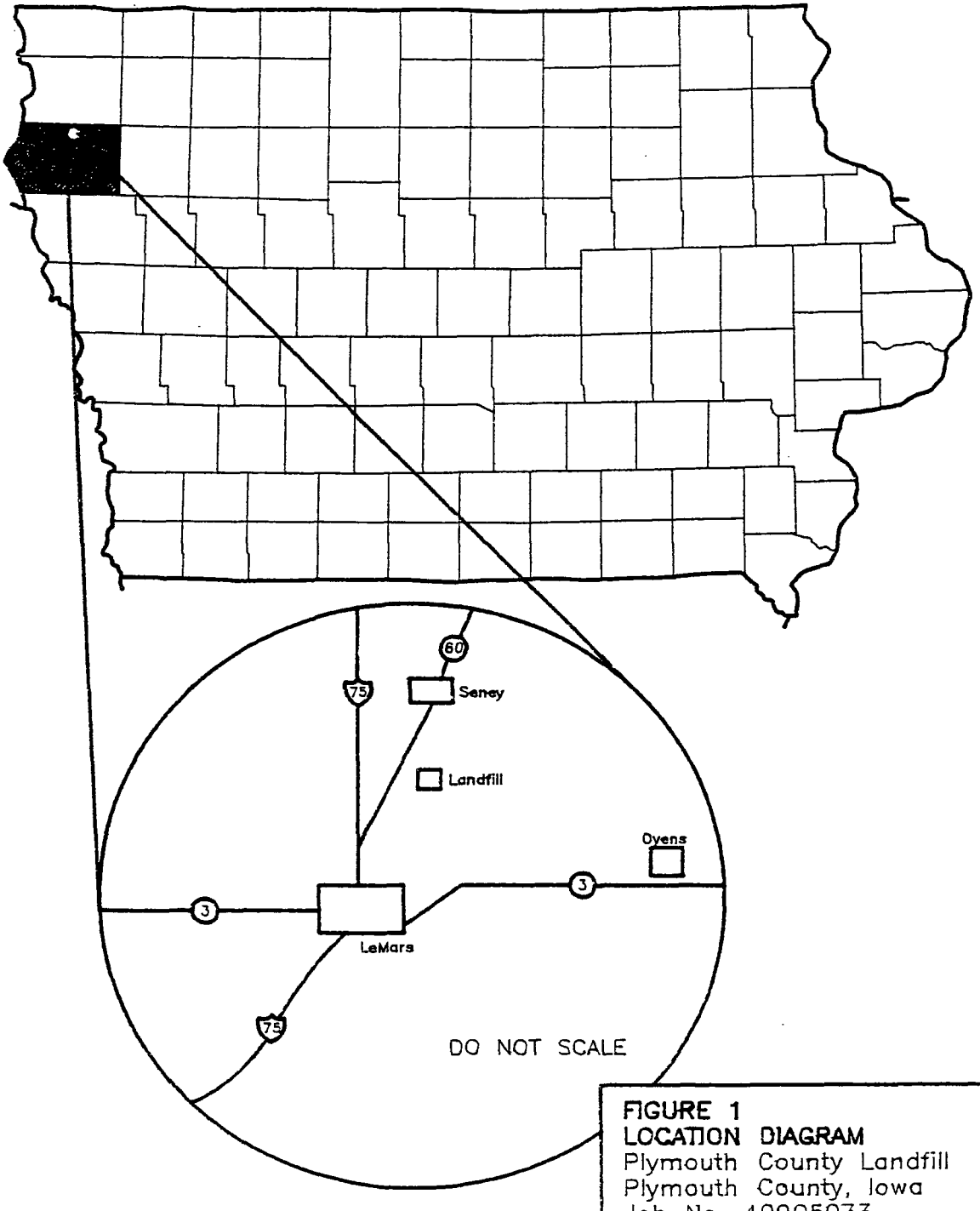
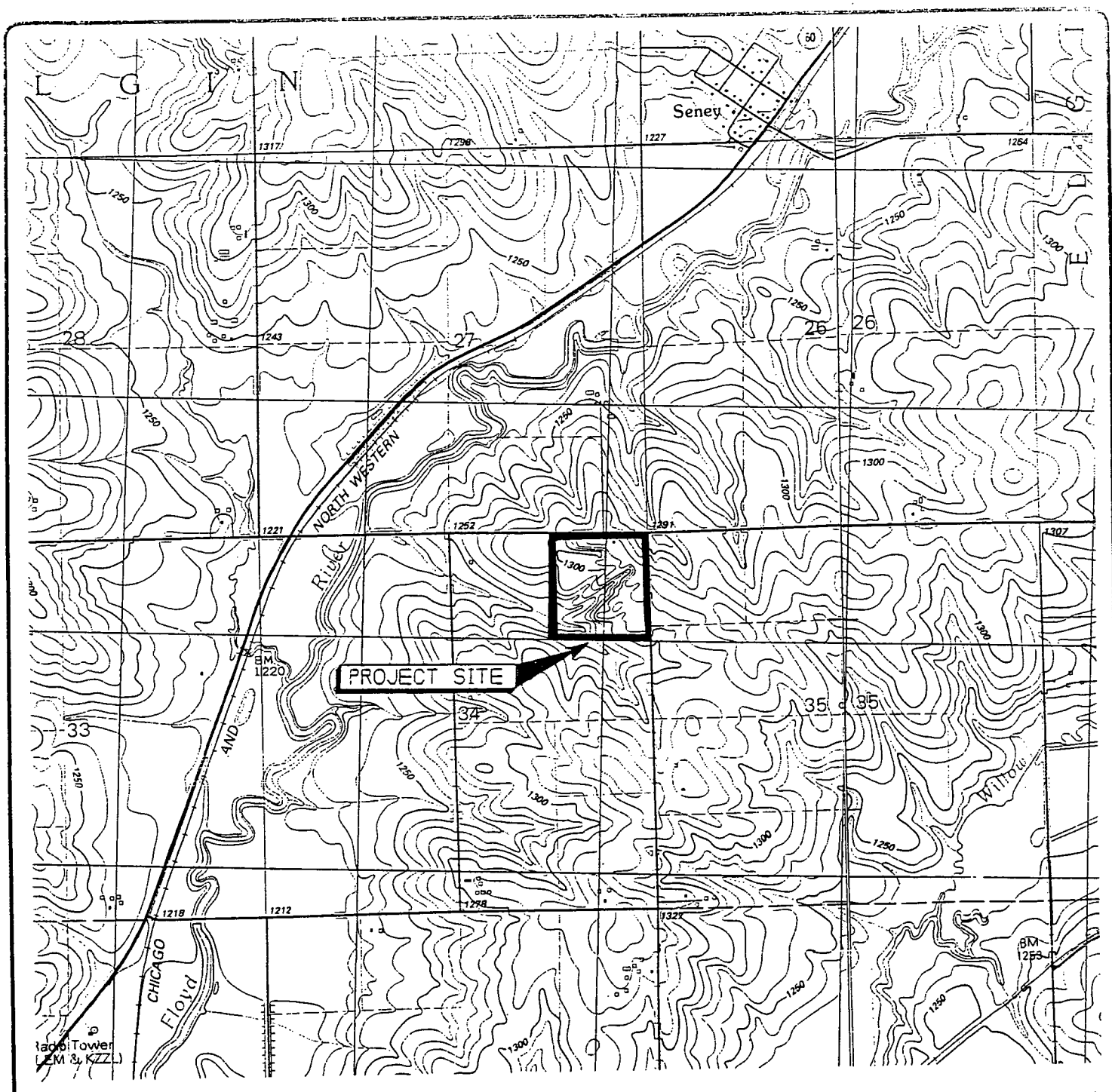


FIGURE 1
LOCATION DIAGRAM
Plymouth County Landfill
Plymouth County, Iowa
Job No. 40905033

Terracon



0 1 MILE

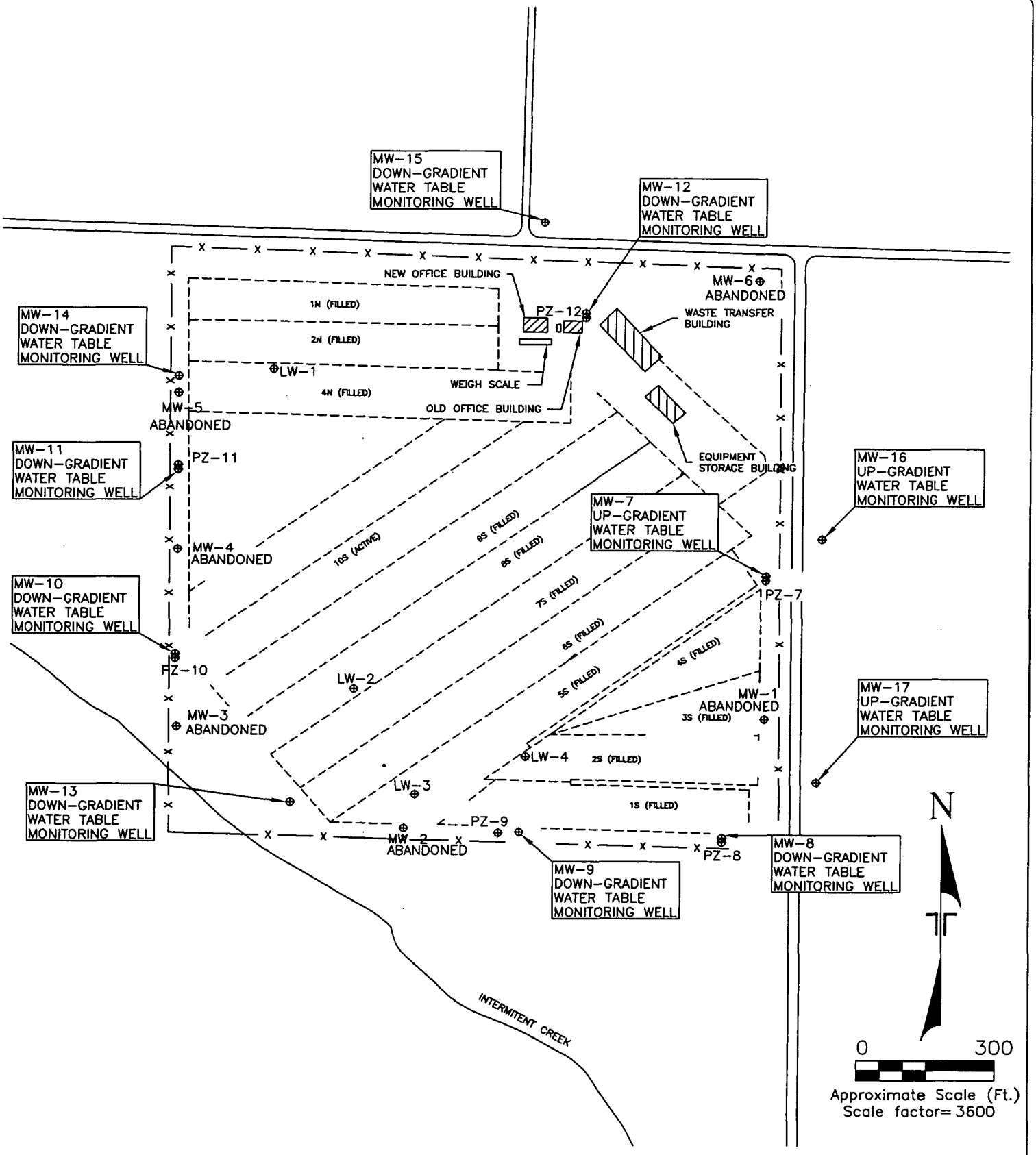
0 5000 FEET

NORTH

FIGURE 2
REGIONAL TOPOGRAPHIC MAP
Plymouth County Landfill
Plymouth County, Iowa
Job No. 40905033

Terracon

Form 101—1-87



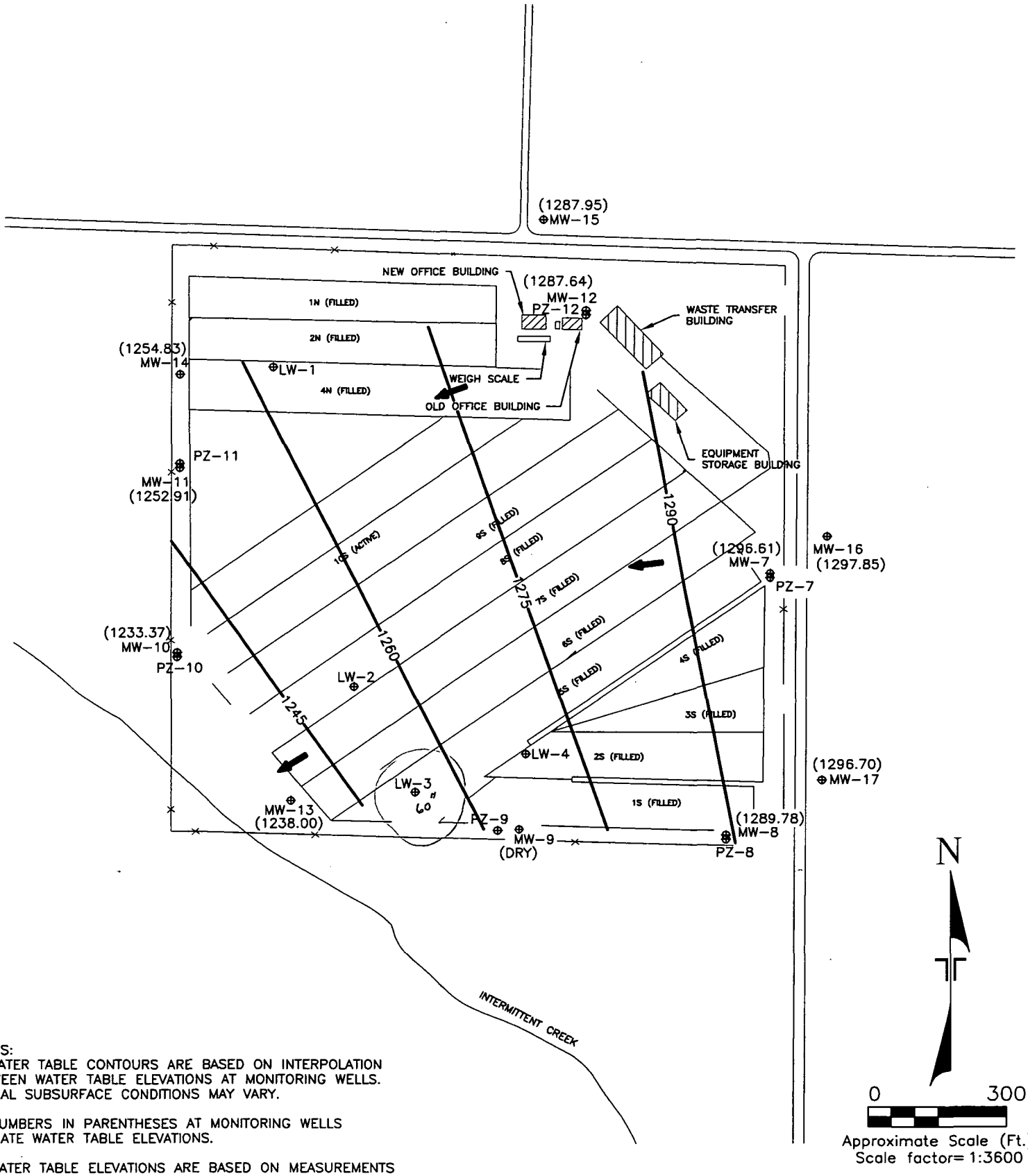
LEGEND

- ⊕ MONITORING INSTRUMENT
- —— x —— FENCE LINE
- BUILDING

HMSP
MONITORING WELL LOCATIONS
PLYMOUTH COUNTY LANDFILL
PLYMOUTH COUNTY, IOWA

Project Mngr: RMB	Terracon	Project No. 40905033
Designed By: RMB		Scale: 1"=300'
Drawn By: JTW	2211 S. 156th Circle Omaha, NE 68130	File No. 0E033R43
Checked By: RMB		Date: DECEMBER 2004
Approved By: DMS	Figure No. 3	

R4 BDA 11/29/04



NOTES:
1. WATER TABLE CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER TABLE ELEVATIONS AT MONITORING WELLS. ACTUAL SUBSURFACE CONDITIONS MAY VARY.

2. NUMBERS IN PARENTHESES AT MONITORING WELLS INDICATE WATER TABLE ELEVATIONS.

3. WATER TABLE ELEVATIONS ARE BASED ON MEASUREMENTS TAKEN ON JANUARY 20, 2004.

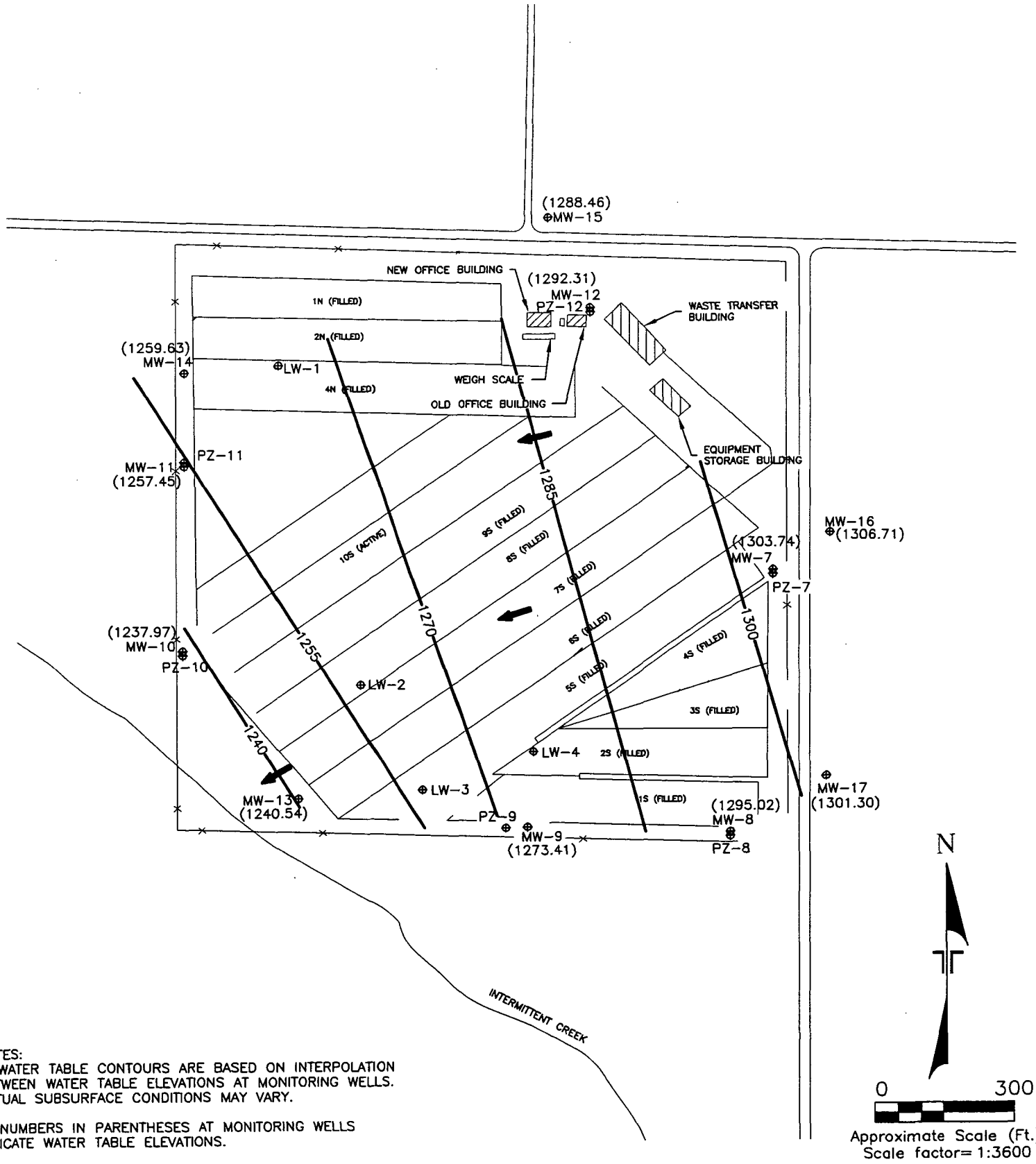
LEGEND

- ⊕ MONITORING INSTRUMENT
- ➡ INFERRED GROUNDWATER FLOW DIRECTION
- —1275— WATER TABLE CONTOUR
- —— x —— FENCE LINE
- BUILDING

R6 BDA 11/29/04

WATER TABLE CONTOUR MAP
JANUARY 20, 2004
PLYMOUTH COUNTY LANDFILL
PLYMOUTH COUNTY, IOWA

Project Mngr: RMB	Terracon		Project No. 40905033
Designed By: RMB			Scale: AS SHOWN
Drawn By: RSN	2211 S. 156th Circle Omaha, NE 68130		File No. 0E033R44
Checked By: RMB			Date: DECEMBER 2004
Approved By: DMS		Figure No.	4



NOTES:
1. WATER TABLE CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER TABLE ELEVATIONS AT MONITORING WELLS. ACTUAL SUBSURFACE CONDITIONS MAY VARY.

2. NUMBERS IN PARENTHESES AT MONITORING WELLS INDICATE WATER TABLE ELEVATIONS.

3. WATER TABLE ELEVATIONS ARE BASED ON MEASUREMENTS TAKEN ON JULY 29, 2004.

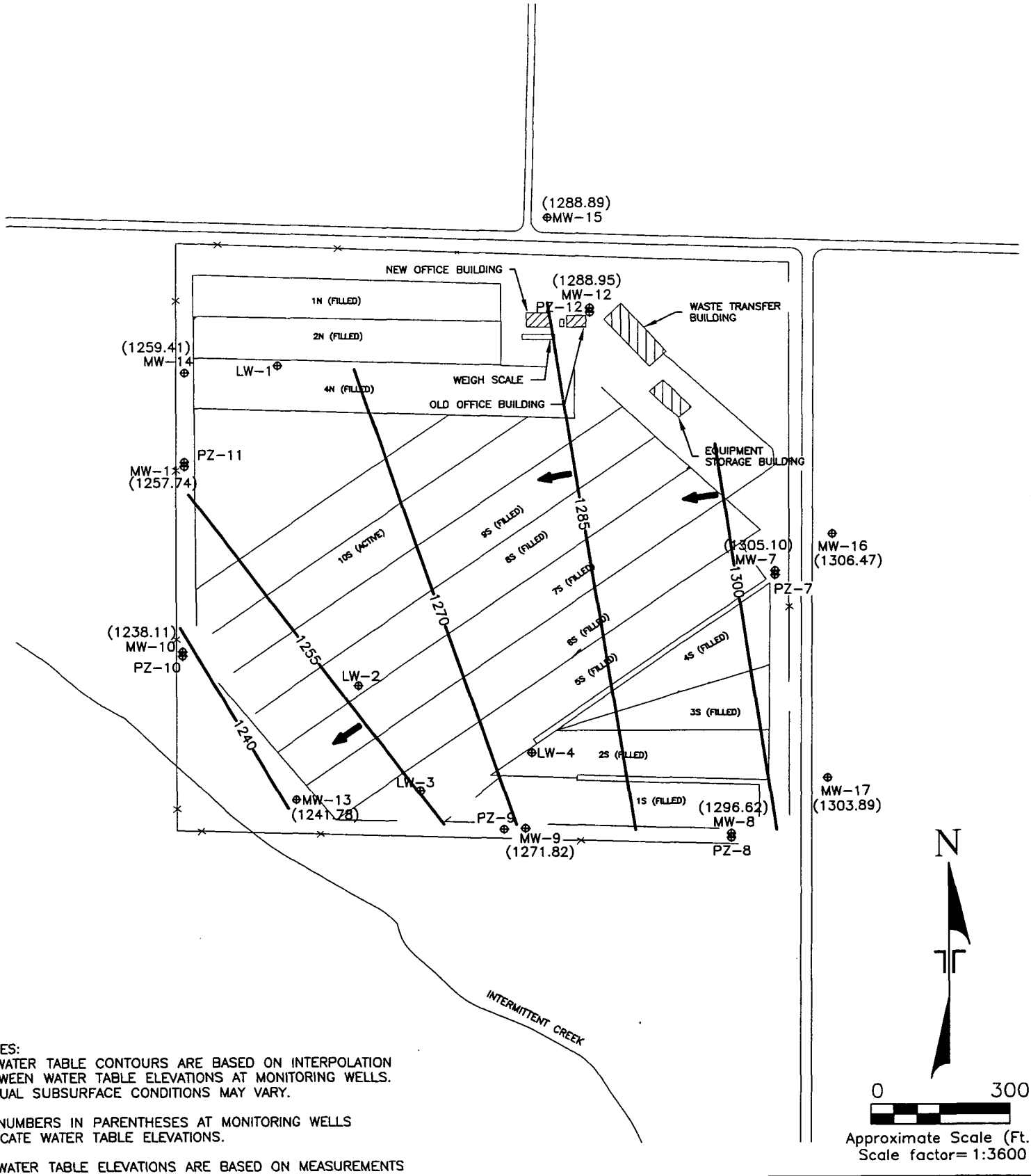
LEGEND

- ⊕ MONITORING INSTRUMENT
- ➡ INFERRED GROUNDWATER FLOW DIRECTION
- —1270— WATER TABLE CONTOUR
- —— x —— FENCE LINE
- BUILDING

R6 BDA 11/29/04

WATER TABLE CONTOUR MAP
JULY 29, 2004
PLYMOUTH COUNTY LANDFILL
PLYMOUTH COUNTY, IOWA

Project Mngr: RMB	Terracon		Project No. 40905033
Designed By: RMB			Scale: AS SHOWN
Drawn By: RSN	2211 S. 156th Circle Omaha, NE 68130		File No. 0E033R45
Checked By: RMB			Date: DECEMBER 2004
Approved By: DMS		Figure No.	5



NOTES:
1. WATER TABLE CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER TABLE ELEVATIONS AT MONITORING WELLS. ACTUAL SUBSURFACE CONDITIONS MAY VARY.

2. NUMBERS IN PARENTHESES AT MONITORING WELLS INDICATE WATER TABLE ELEVATIONS.

3. WATER TABLE ELEVATIONS ARE BASED ON MEASUREMENTS TAKEN ON SEPTEMBER 22, 2004.

LEGEND

- ⊕ MONITORING INSTRUMENT
- ➡ INFERRED GROUNDWATER FLOW DIRECTION
- —1265— WATER TABLE CONTOUR
- —— x —— FENCE LINE
- BUILDING

R6 BDA 11/29/04

WATER TABLE CONTOUR MAP
SEPTEMBER 22, 2004
PLYMOUTH COUNTY LANDFILL
PLYMOUTH COUNTY, IOWA

Project Mngr: RMB	Terracon		Project No. 40905033
Designed By: RMB			Scale: AS SHOWN
Drawn By: RSN	2211 S. 156th Circle Omaha, NE 68130		File No. 0E033R46
Checked By: RMB			Date: DECEMBER 2004
Approved By: DMS		Figure No.	6

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

Appendix B

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. ***MW-17*** ***(Up-gradient)***

ANALYSIS PERFORMED BY: ***TestAmerica Laboratories*** ***SAMPLED BY:*** ***Plymouth County Landfill Personnel***

PARAMETER	Statistical Considerations				SAMPLE DATE													
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-17 Standard Deviation	MW-17 Mean	10/4/1997	11/10/1997	1/8/1998	4/22/1998	7/1/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000	4/25/2001	10/23/2001	4/28/2002	10/6/2002
Laboratory Parameters																		
Chloride (mg/l)	5.111	0.454	1.164	2.782	-	**2.5**	**2.5**	**2.5**	7.3	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
Chemical Oxygen Demand (mg/l)	7.945	0.000	2.326	3.294	-	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**11**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	-	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	-	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.25	0.25	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.20	0.20	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.00	1.00	0.000	1.000	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-	-	-	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.53	0.00	0.420	0.688	-	**0.5**	**0.5**	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.50	0.50	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**	**0.01**	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.000	0.005	-	-	-	-	-	**0.005**	-	**0.005**	-	**0.005**	-	**0.005**	**0.005**	**0.005**
Field Parameters																		
pH	8.2	5.8	0.59	7.0	-	-	-	7.0	7.0	6.8	6.8	6.8	7	5.1	7.5	7.5	6.9	7.4
Specific Conductance (umhos/cm)	723	236	121.7	479	-	-	-	408	450	444	449	449	465	440	511	473	427	417

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. ***MW-17 (Up-gradient)***

ANALYSIS PERFORMED BY: ***TestAmerica Laboratories*** ***SAMPLED BY:*** ***Plymouth County Landfill Personnel***

PARAMETER	Statistical Considerations				SAMPLE DATE			
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-17 Standard Deviation	MW-17 Mean	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters								
Chloride (mg/l)	5.111	0.454	1.164	2.782	**2.5**	**2.5**	**2.5**	**2.5**
Chemical Oxygen Demand (mg/l)	7.945	0.000	2.326	3.294	7.5	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.25	0.25	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.20	0.20	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.00	1.00	0.000	1.000	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.53	0.00	0.420	0.688	-	**0.5**	1.44	**0.5**
Trichloroethene (µg/l)	0.50	0.50	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	**0.01**	**-**	**0.01**	**-**
Total Organic Halogens (mg/l)	0.005	0.005	0.000	0.005	**0.005**	**-**	**0.005**	**-**
Field Parameters								
pH	8.2	5.8	0.59	7.0	7.3	7.6	6.9	7.2
Specific Conductance (umhos/cm)	723	236	121.7	479	299	572	525	861

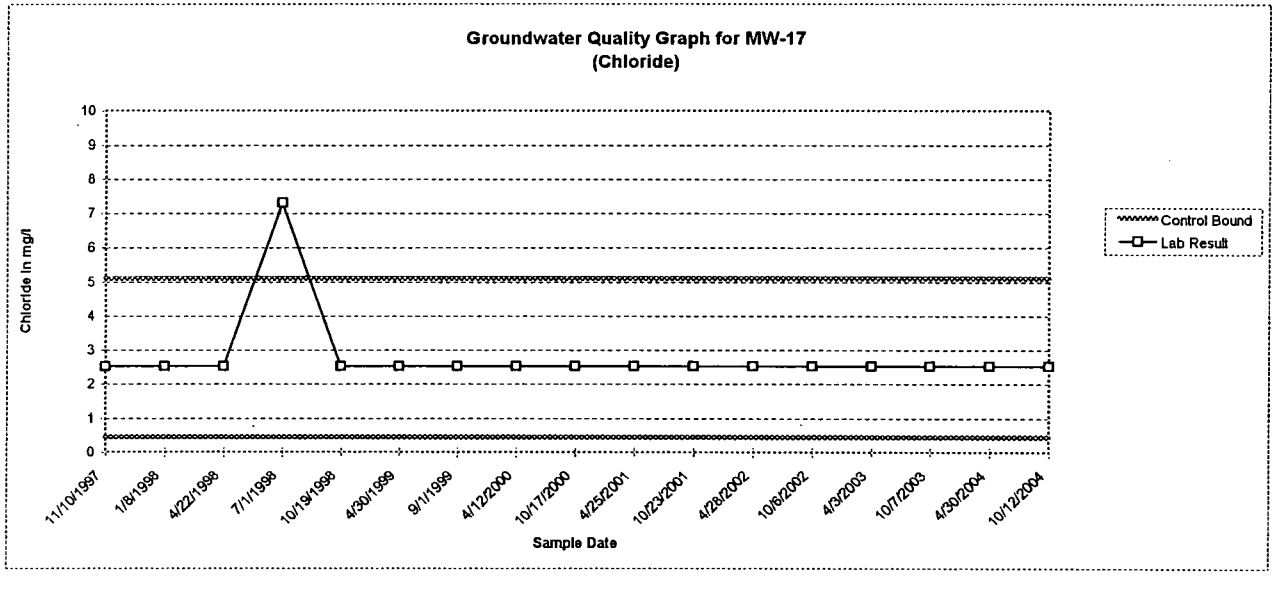
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

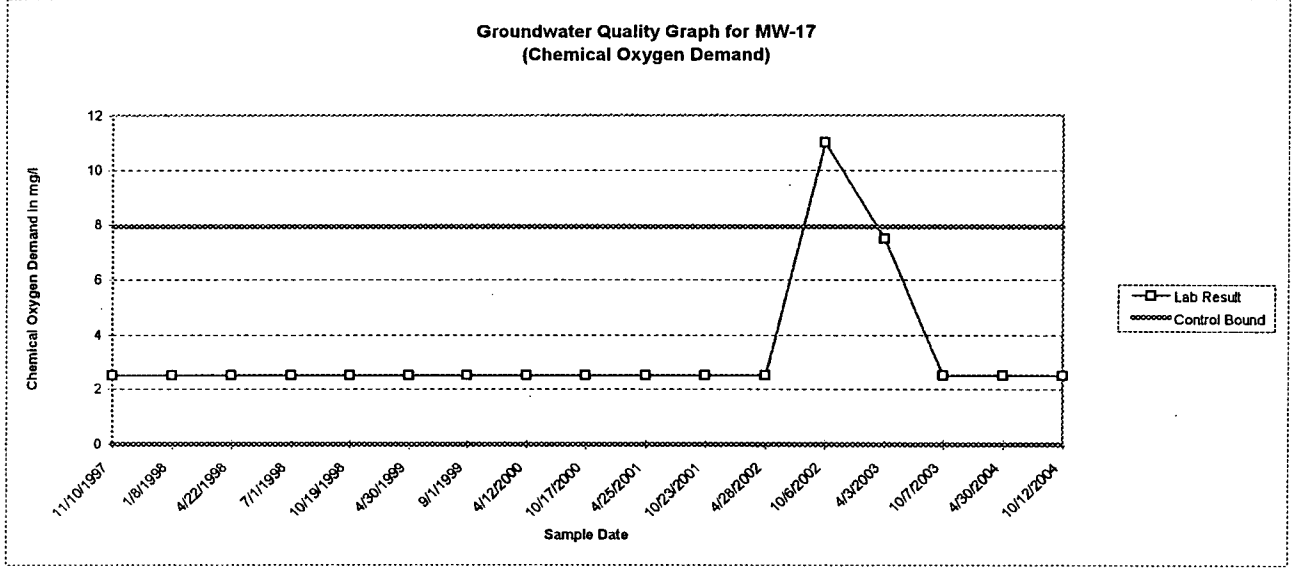


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

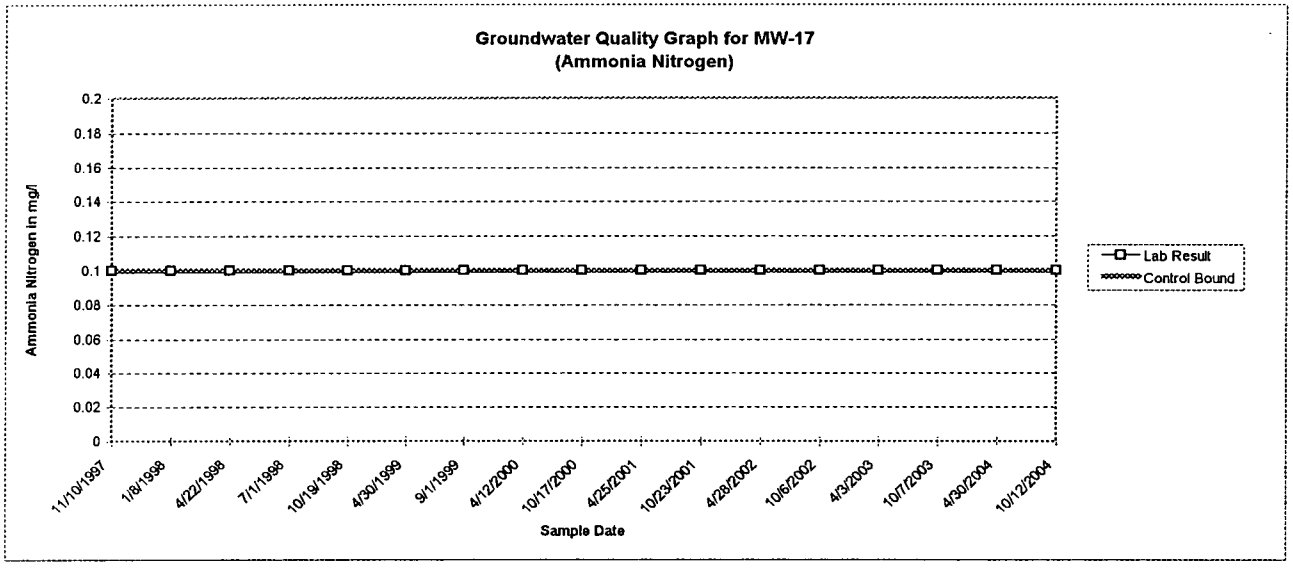


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

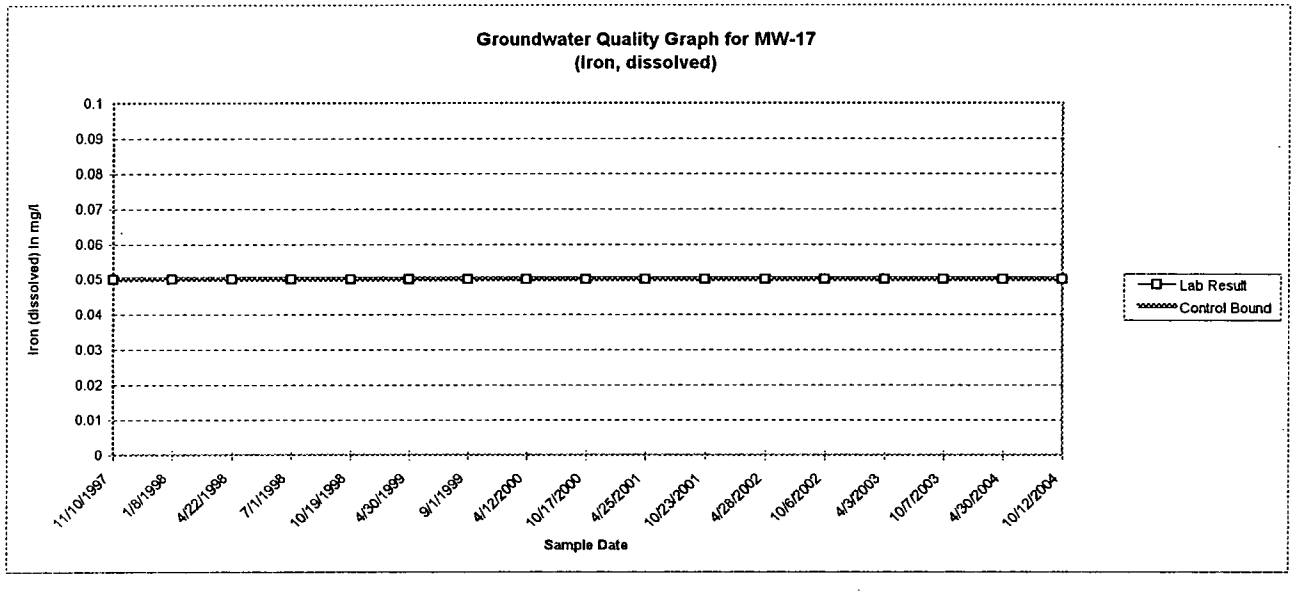


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

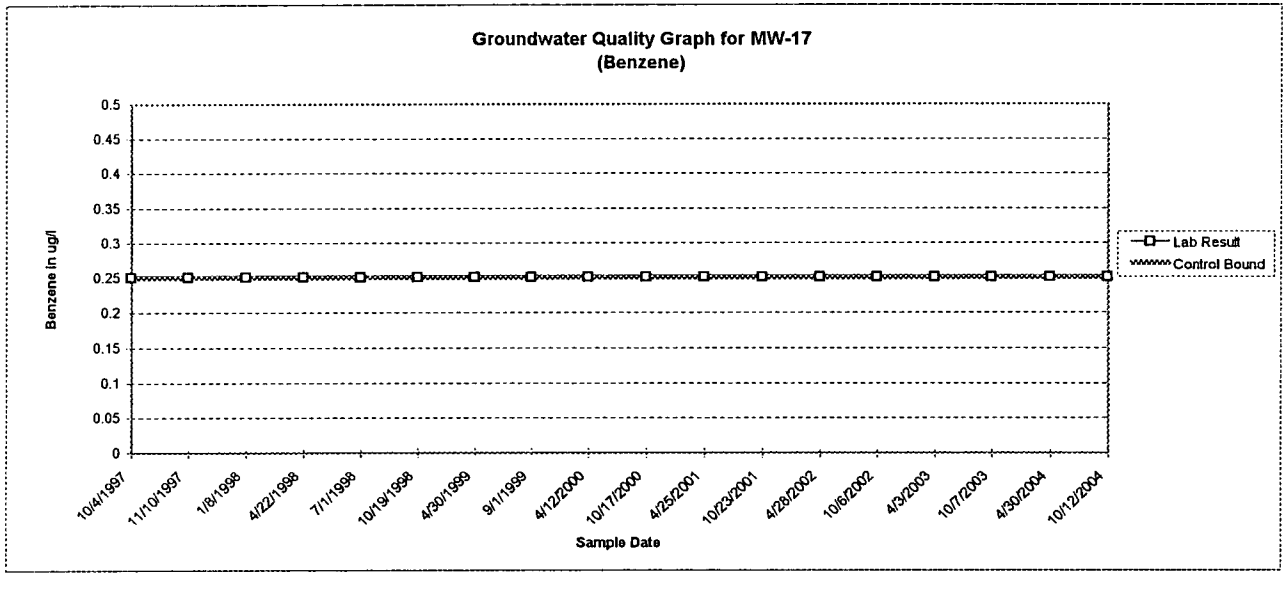


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

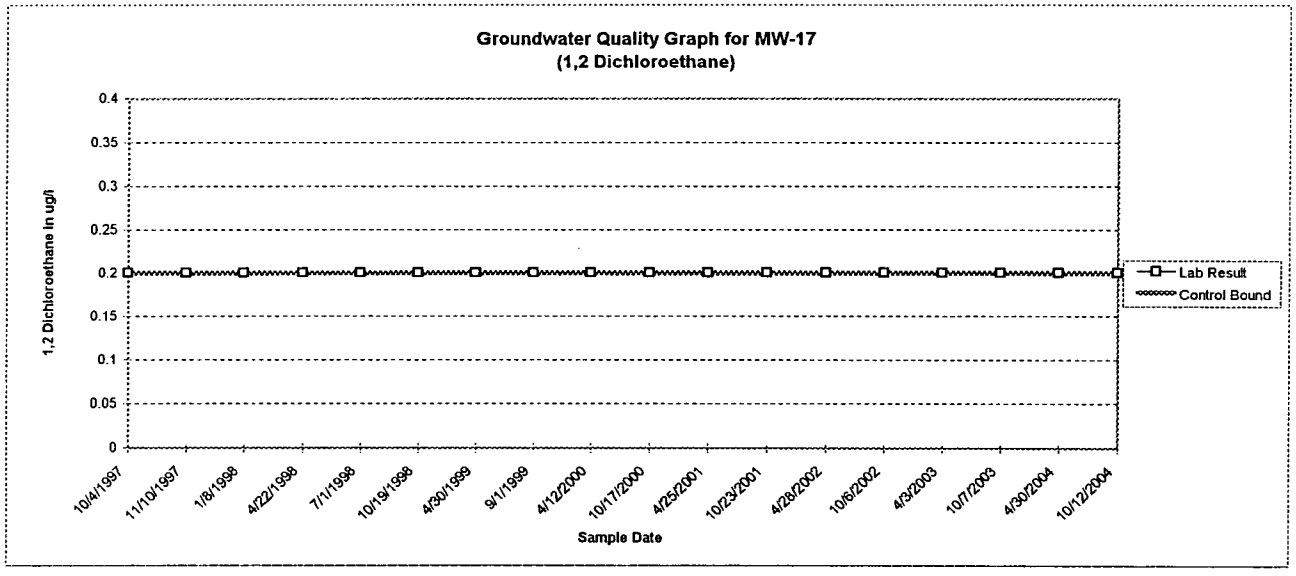


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

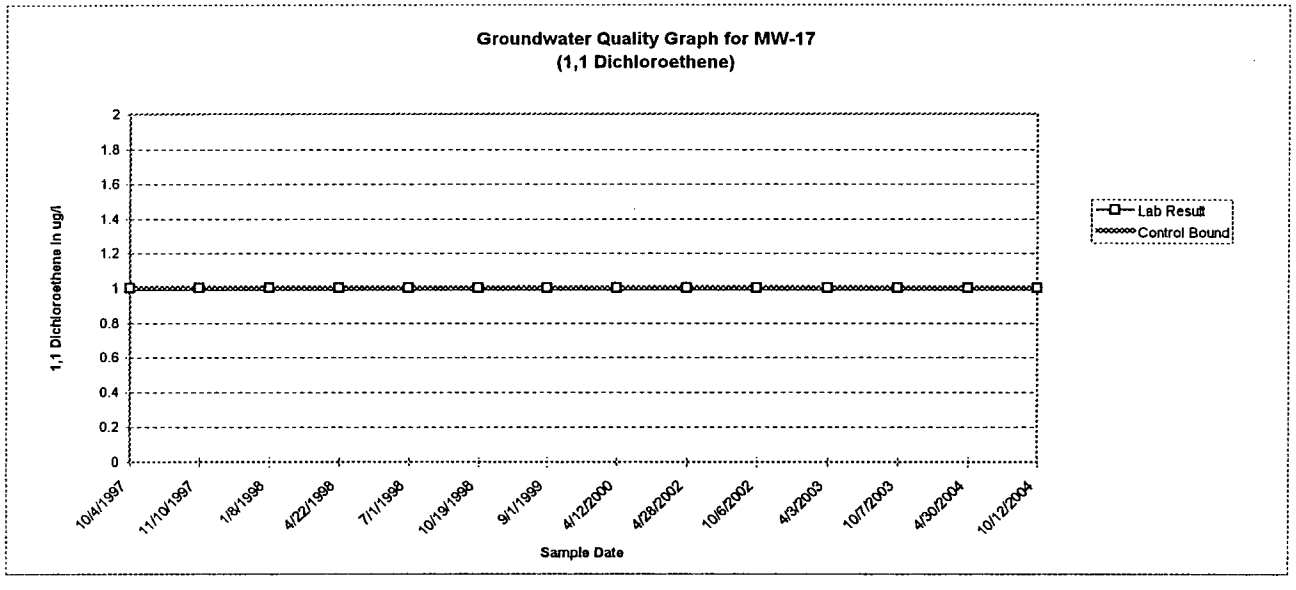


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

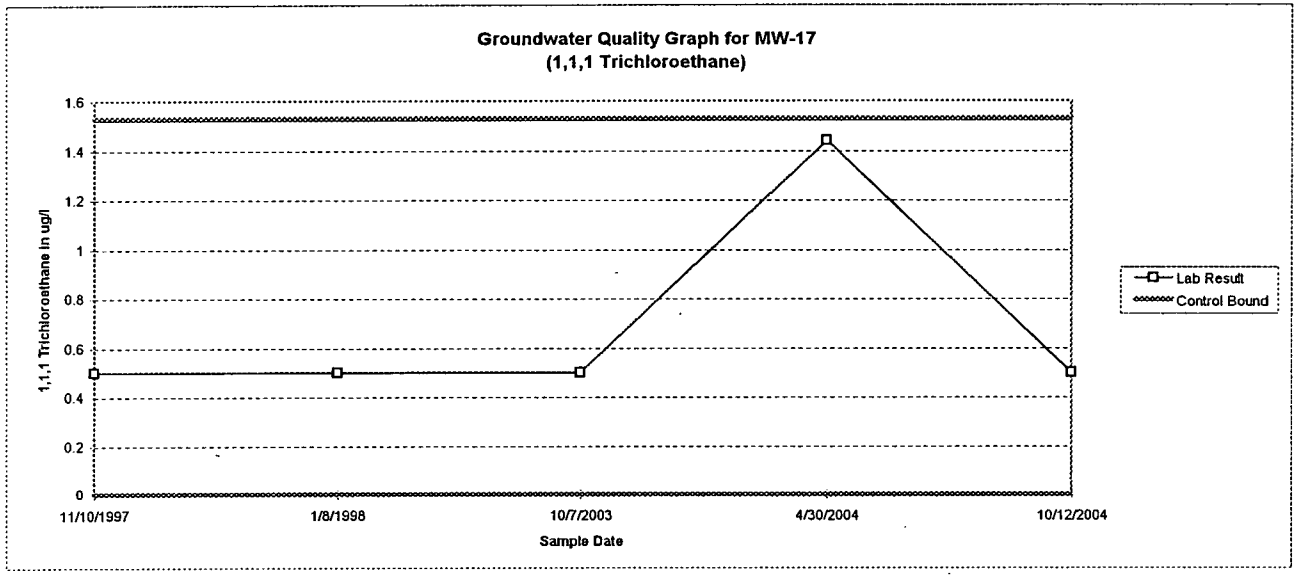


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



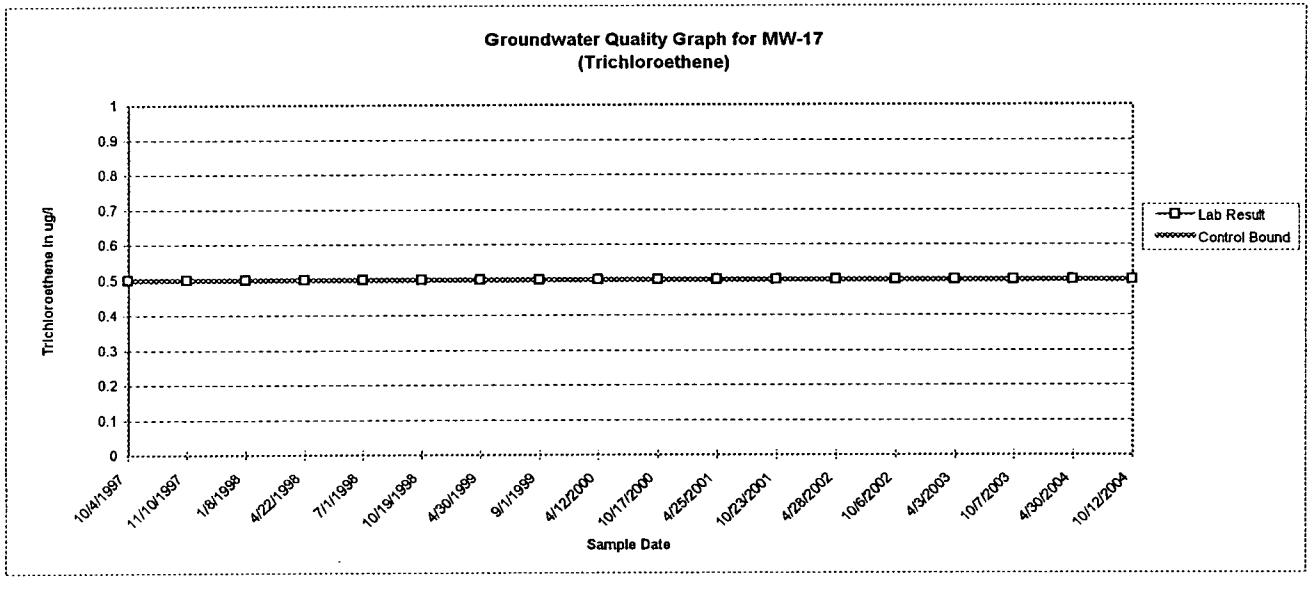
NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

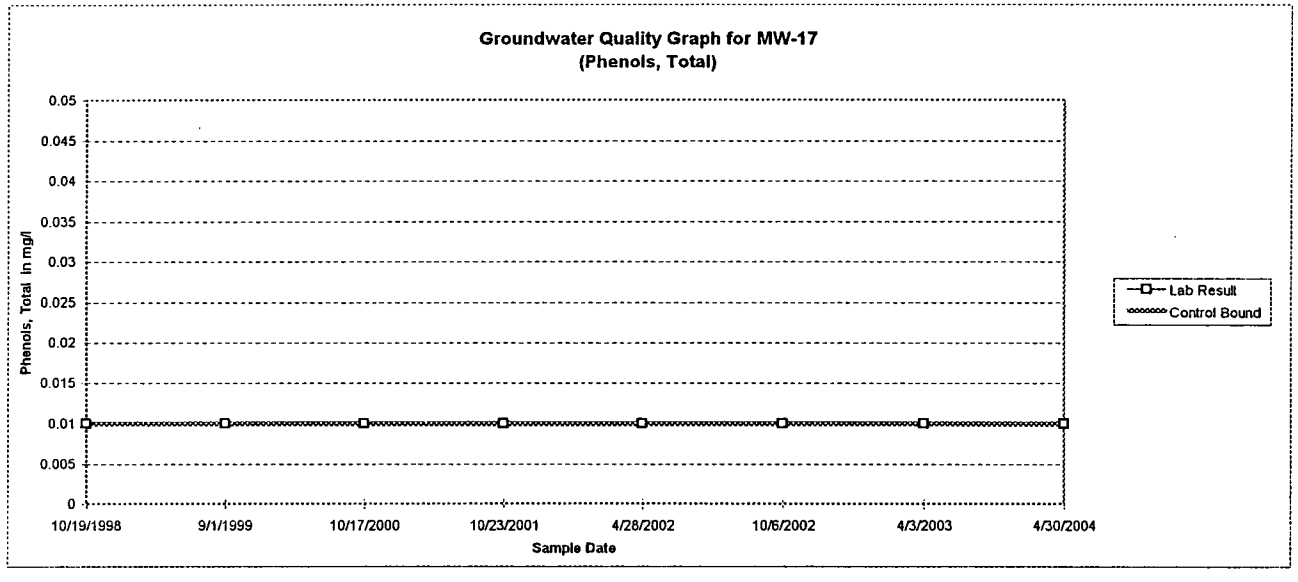


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

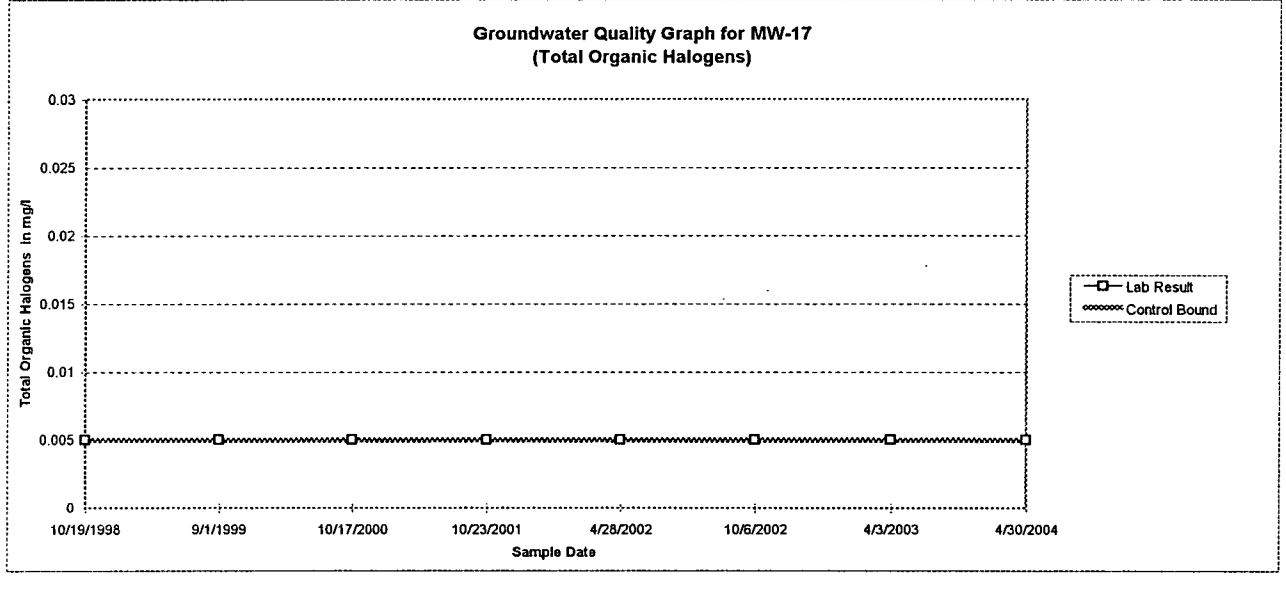


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

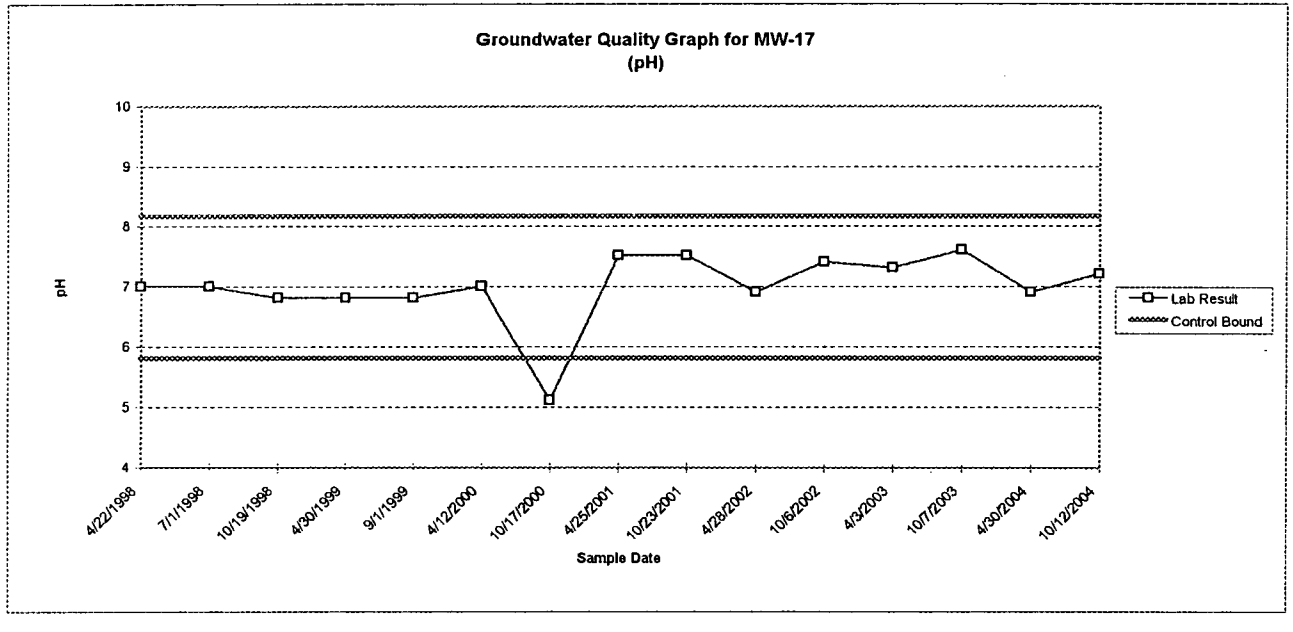


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

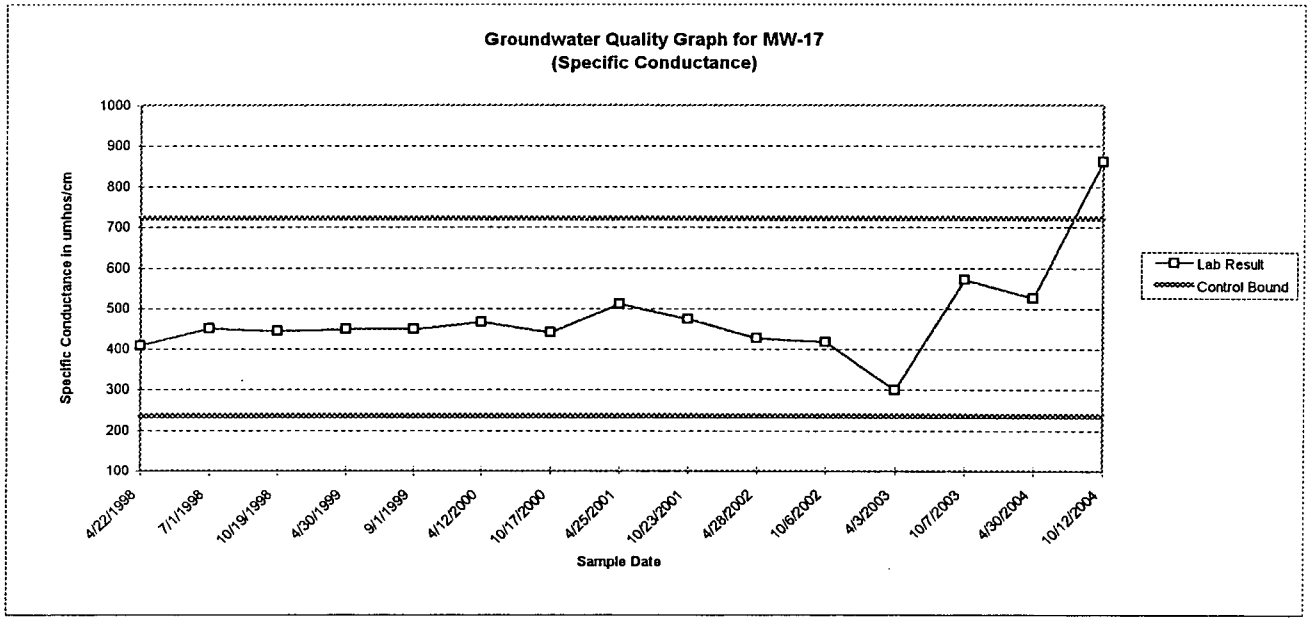


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-17

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-16* *(Up-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE								
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-16 Standard Deviation	MW-16 Mean	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000	4/25/2001	10/23/2001
Laboratory Parameters													
Chloride (mg/l)	5.111	0.454	1.955	4.667	-	-	-	-	-	-	-	5.2	**2.5**
Chemical Oxygen Demand (mg/l)	7.945	0.000	0.000	2.500	-	-	-	-	-	-	-	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	-	-	-	-	-	-	-	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	-	-	-	-	-	-	-	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.000	1.000	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.155	0.540	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	-	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.000	0.005	-	-	-	-	-	-	**0.005**	-	**0.005**
Field Parameters													
pH	8.2	5.8	0.5	7.0	-	6.9	6.7	6.5	6.1	6.3	6.7	7.4	7.3
Specific Conductance (umhos/cm)	723	236	120	483	-	448	473	500	546	445	346	409	487

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-16* *(Up-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE					
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-16 Standard Deviation	MW-16 Mean	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004 0
Laboratory Parameters										
Chloride (mg/l)	5.111	0.454	1.955	4.667	-	-	-	6.3	-	-
Chemical Oxygen Demand (mg/l)	7.945	0.000	0.000	2.500	-	-	-	**2.5**	-	-
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	-	-	-	**0.1**	-	-
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	-	-	-	**0.05**	-	-
Benzene (µg/l)	0.250	0.250	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.000	1.000	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000			-	-	-	-	**0.5**	**0.5**
Trichloroethene (µg/l)	0.500	0.500	0.155	0.540	**0.5**	**0.5**	**0.5**	**0.5**	1.1	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	-	-
Total Organic Halogens (mg/l)	0.005	0.005	0.000	0.005	-	-	-	-	-	-
Field Parameters										
pH	8.2	5.8	0.5	7.0	7	7.4	7.3	7.6	6.9	7.3
Specific Conductance (umhos/cm)	723	236	120	483	450	403	466	339	795	659

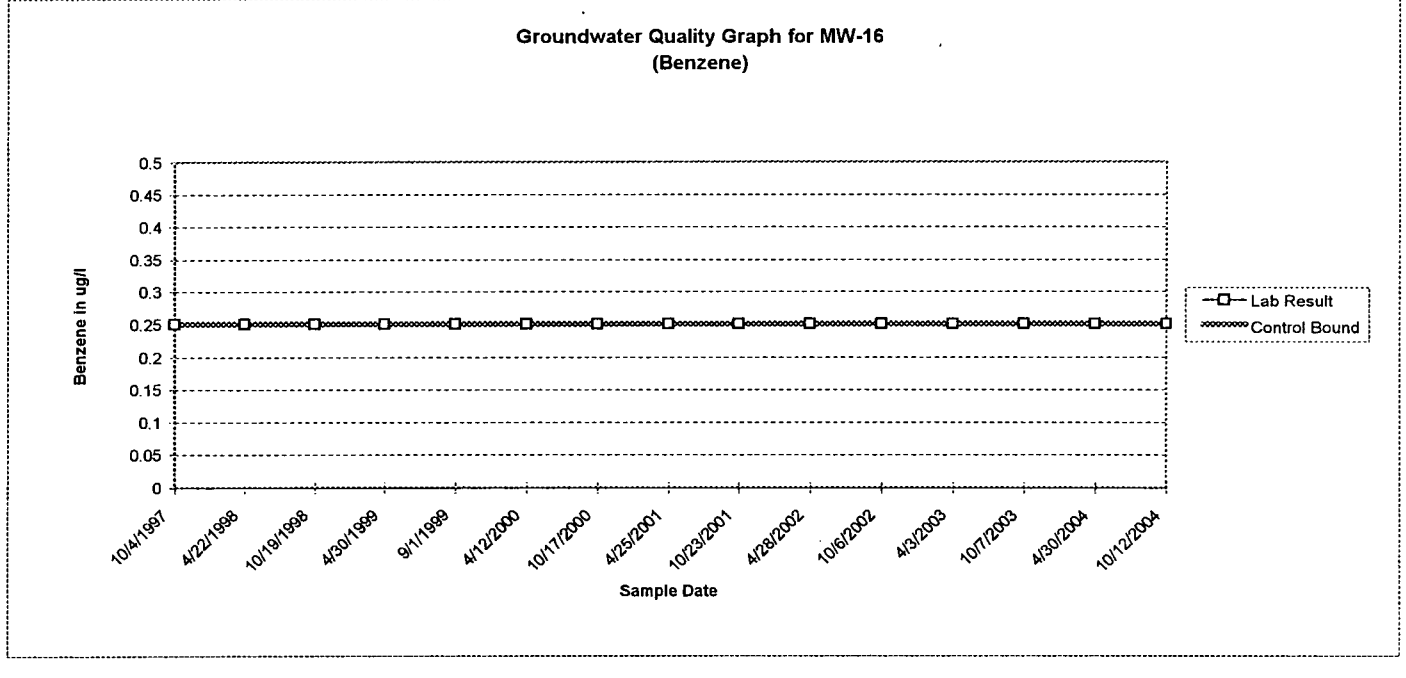
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



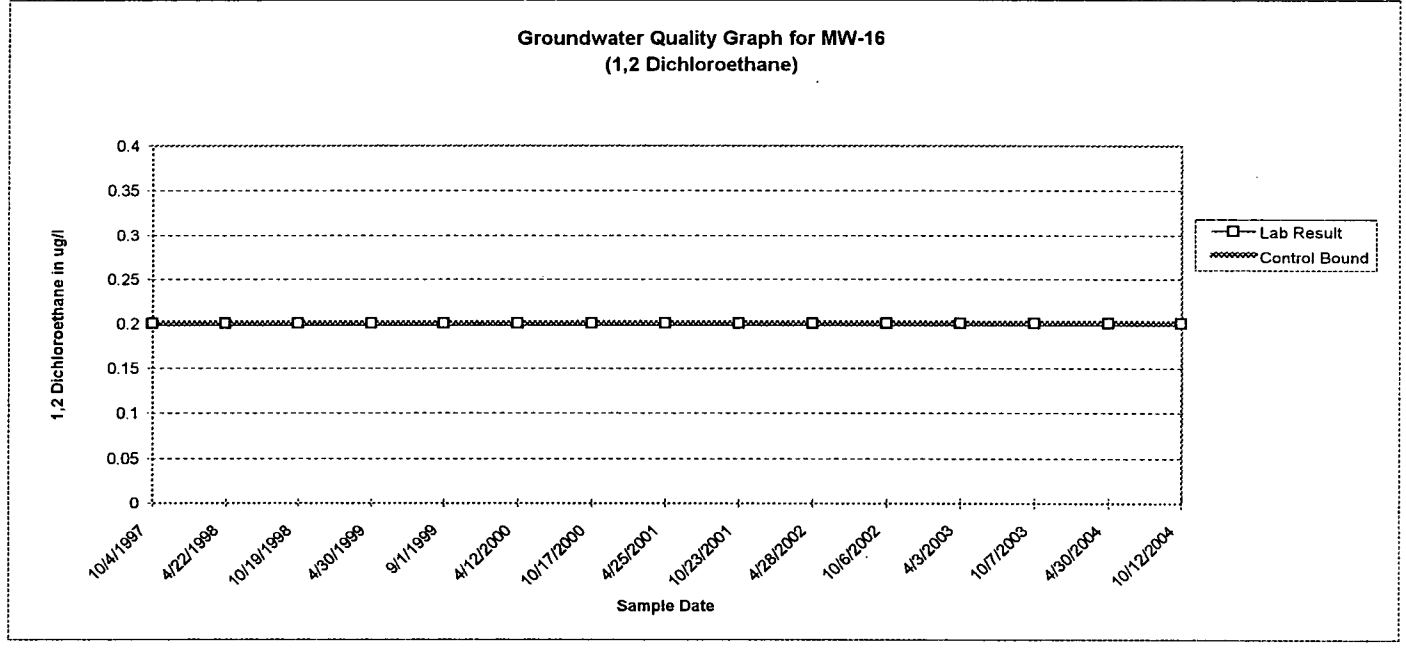
NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



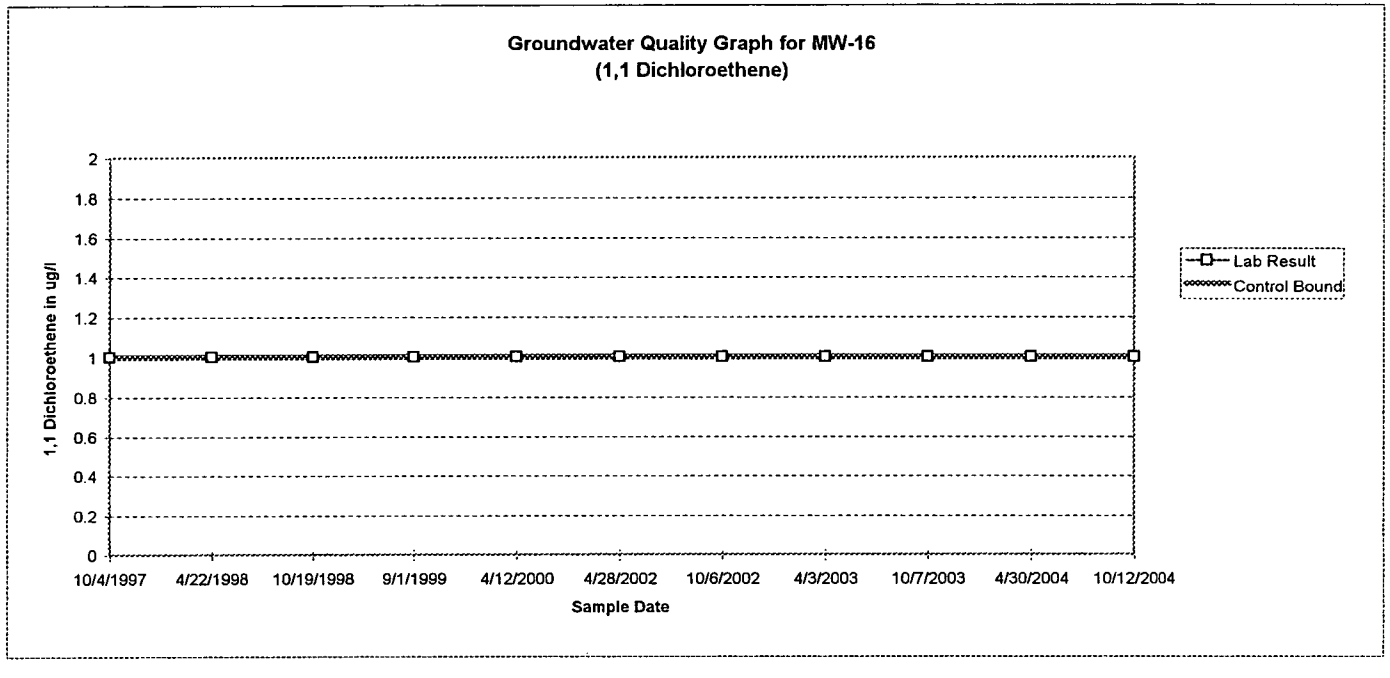
NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

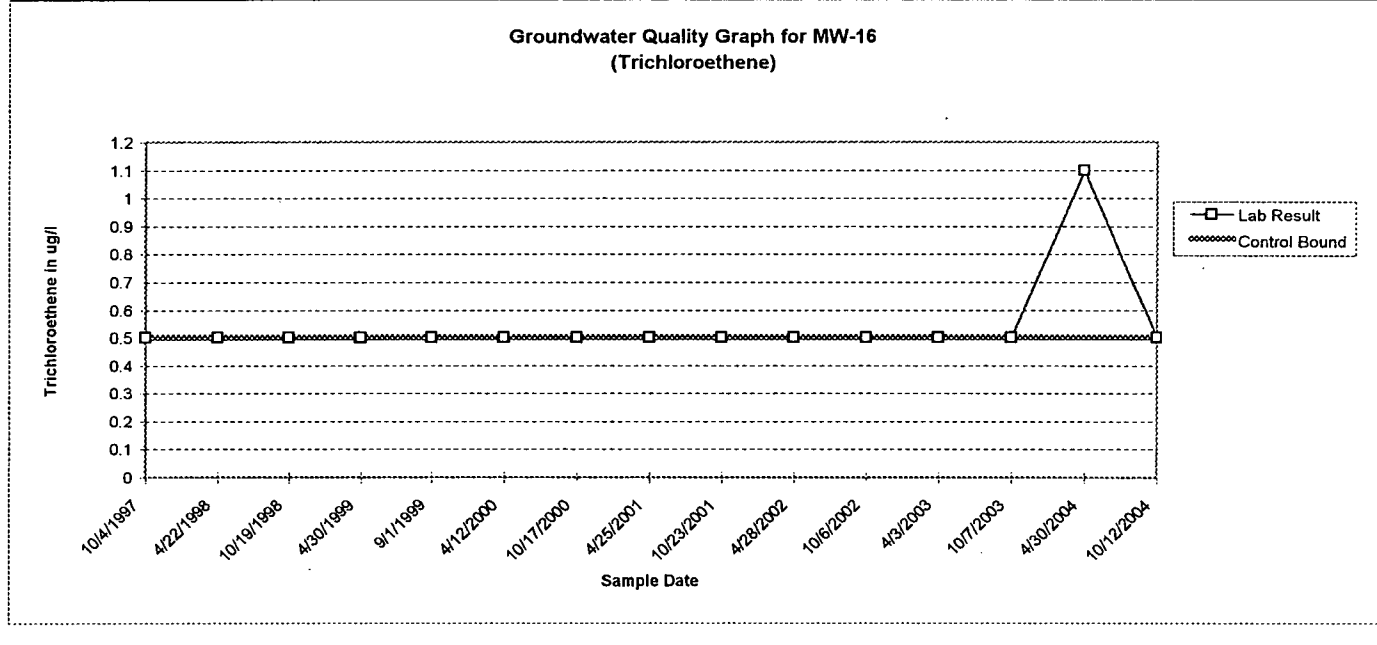


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

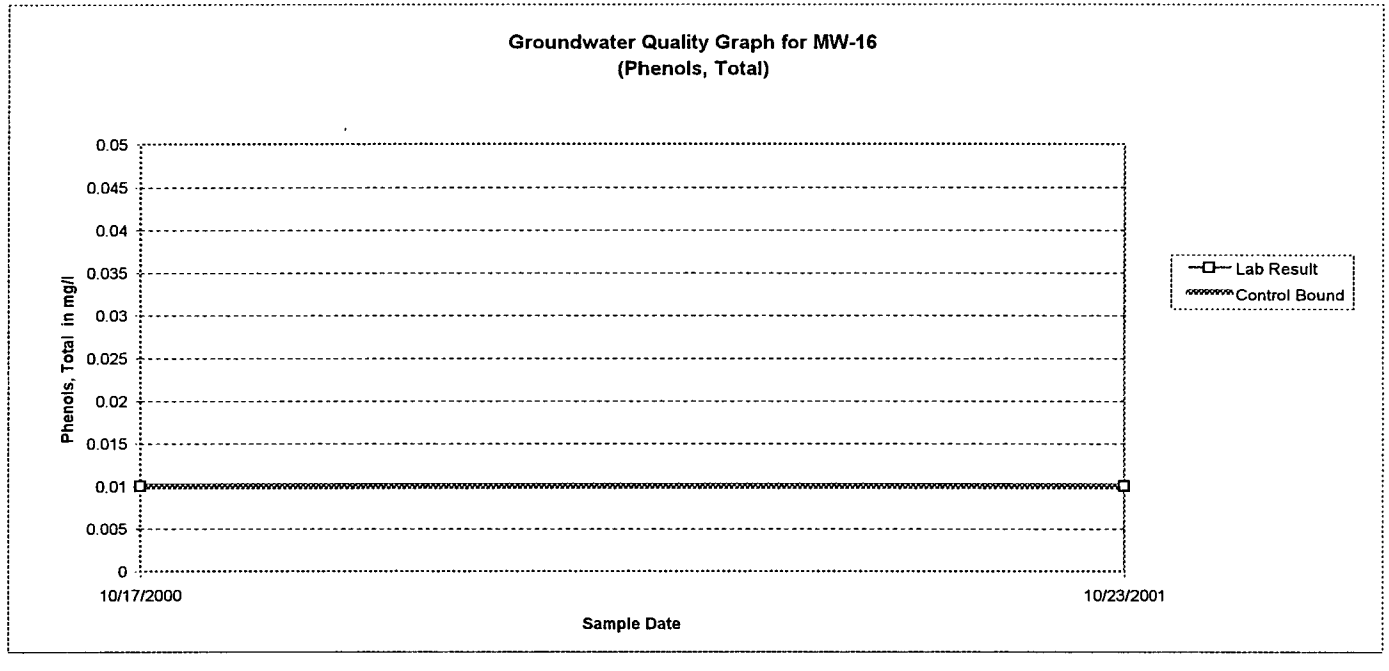


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

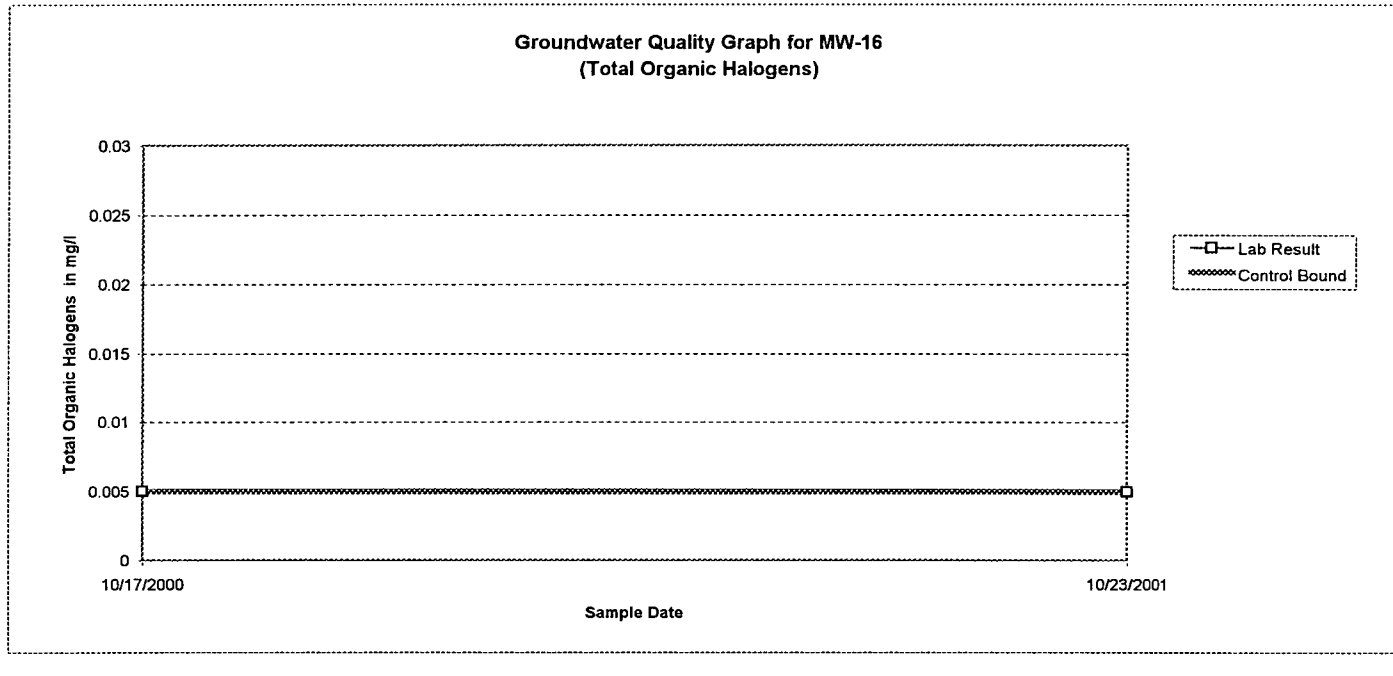


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



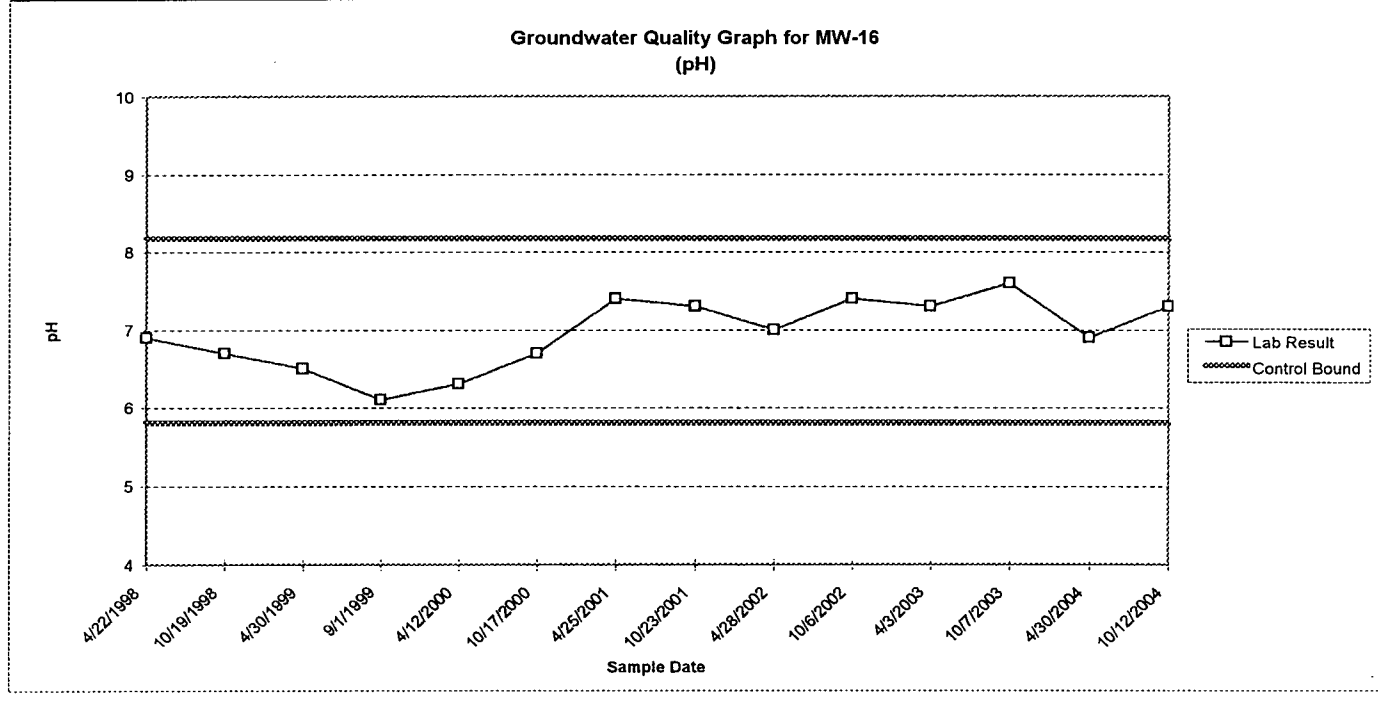
NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

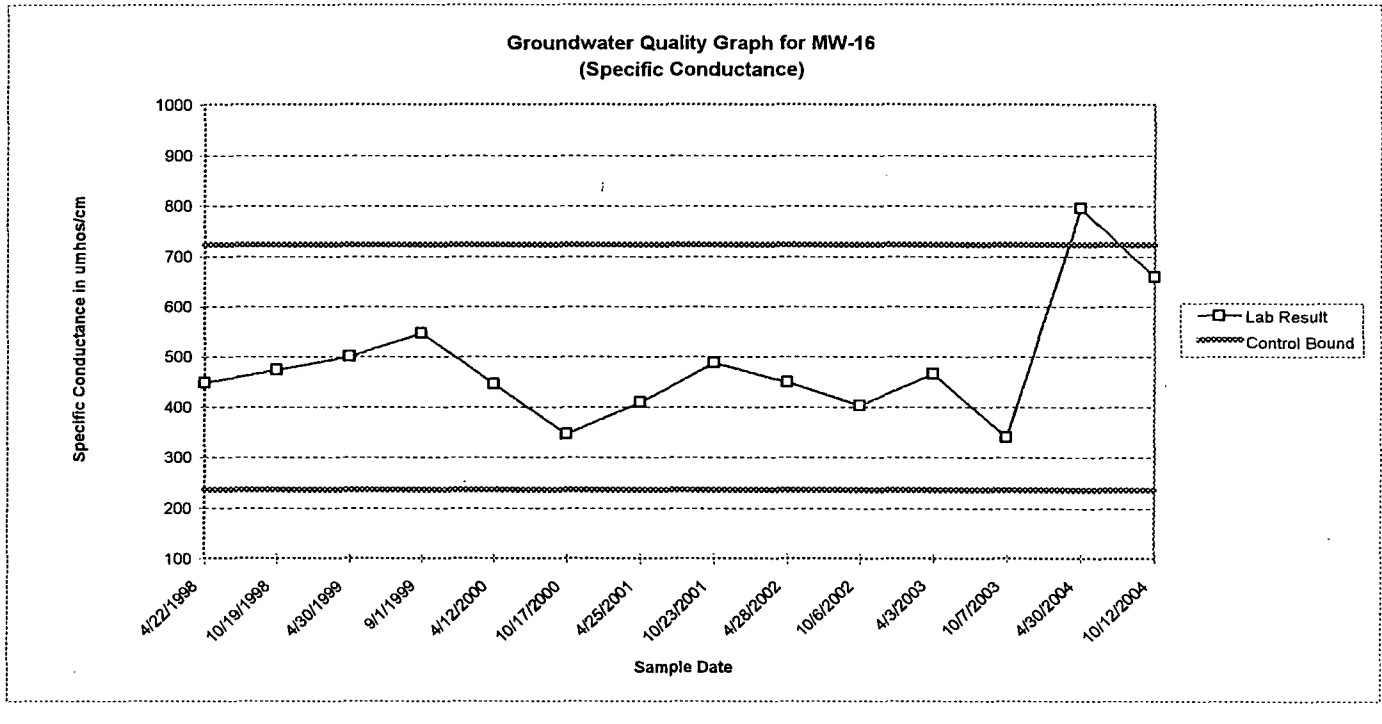


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-16

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-15

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-15* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-15 Standard Deviation	MW-15 Mean	10/4/1997	4/27/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000	4/25/2001	10/24/2001	4/28/2002	10/6/2002
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	0.173	8.500	-	-	-	-	-	-	-	8.3	8.6	-	-
Chemical Oxygen Demand (mg/l)	7.945	0.000	6.640	6.333	-	-	-	-	-	-	-	14	**2.5**	-	-
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	-	-	-	-	-	-	-	**0.1**	**0.1**	-	-
Iron, dissolved (mg/l)	0.050	0.050	0.614	0.500	-	-	-	-	-	-	-	1.2	**0.05**	-	-
Benzene (µg/l)	0.250	0.250	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.000	1.000	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-	-	-	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.407	1.025	**0.5**	**0.5**	**0.5**	**0.5**	1.3	1.3	1.1	1.6	1.3	1.3	1.13
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	-	-	**0.01**	-	**0.01**	-	-
Total Organic Halogens (mg/l)	0.005	0.005	0.001	0.022	-	-	-	-	-	-	0.021	-	0.022	-	-
Field Parameters															
pH	8.2	5.8	0.3	6.4	-	6.5	6.5	6.2	6.0	6.0	5.9	6.7	6.7	6.4	6.7
Specific Conductance (umhos/cm)	723	236	413	751	-	824	824	879	1012	925	969	721	10.75	9.03	886

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-15

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-15* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE			
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-15 Standard Deviation	MW-15 Mean	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters								
Chloride (mg/l)	5.111	0.454	0.173	8.500	-	8.6	-	-
Chemical Oxygen Demand (mg/l)	7.945	0.000	6.640	6.333	-	**2.5**	-	-
Ammonia Nitrogen (mg/l)	0.100	0.100	0.000	0.100	-	**0.1**	-	-
Iron, dissolved (mg/l)	0.050	0.050	0.614	0.500	-	**0.25**	-	-
Benzene (µg/l)	0.250	0.250	0.000	0.250	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.000	0.200	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.000	1.000	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	**0.5**	**0.5**
Trichloroethene (µg/l)	0.500	0.500	0.407	1.025	1.5	1.28	**0.5**	1.07
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-
Total Organic Halogens (mg/l)	0.005	0.005	0.001	0.022	-	-	-	-
Field Parameters								
pH	8.17	5.80	0.3	6.4	6.8	6.5	6.4	6.8
Specific Conductance (umhos/cm)	722.7	236.0	413	751	994	824	1475	167

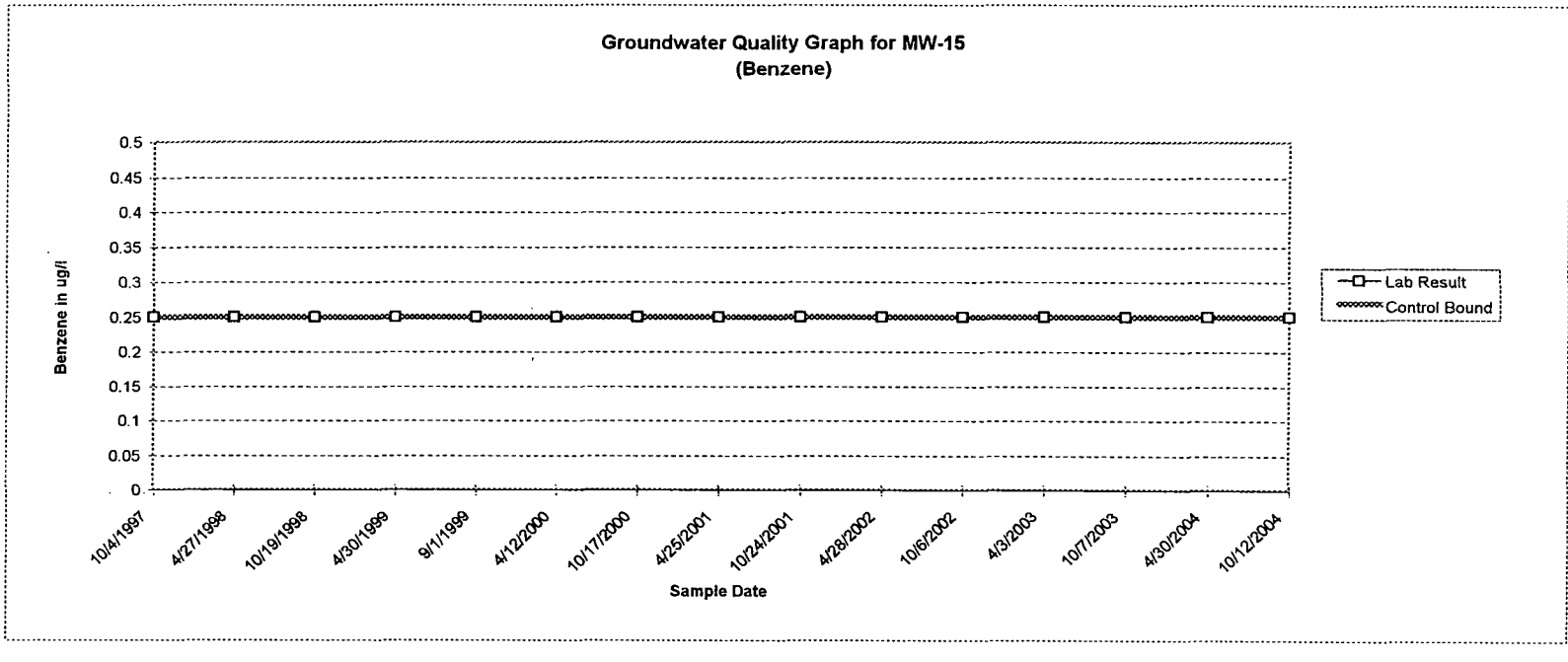
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-15

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-15

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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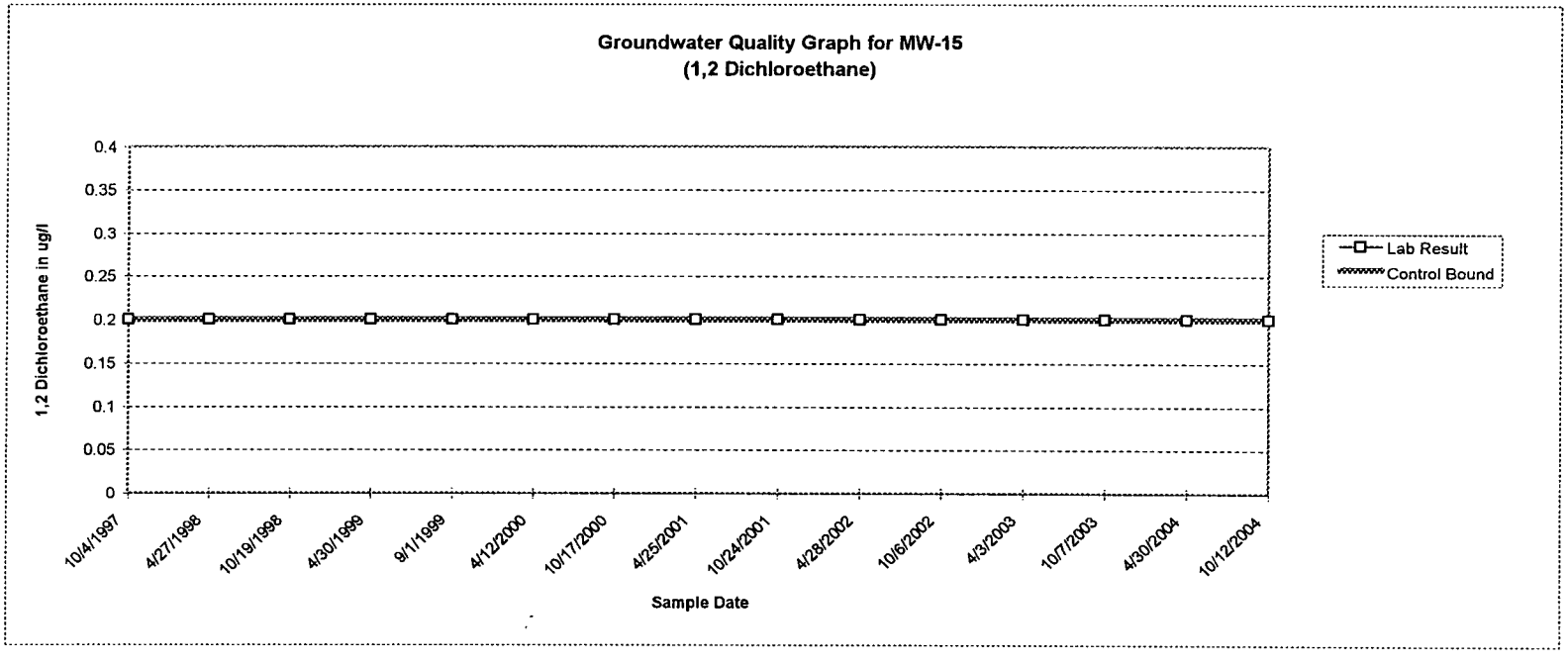

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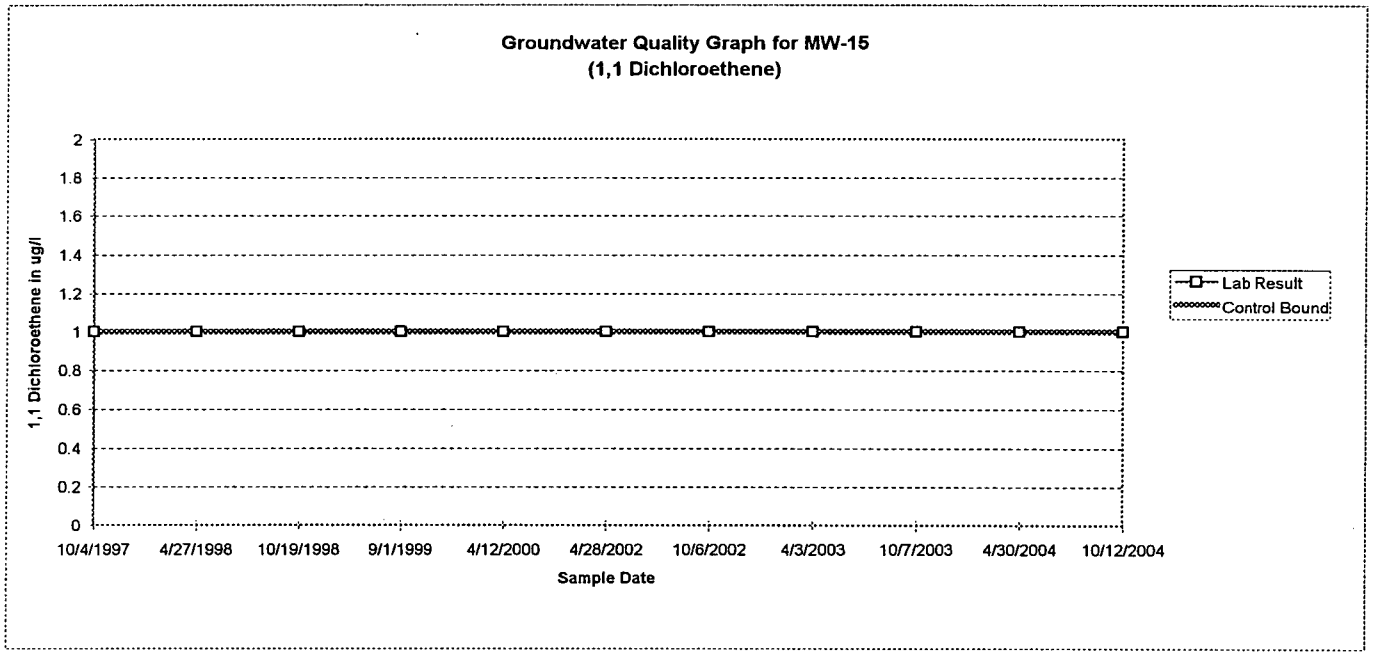

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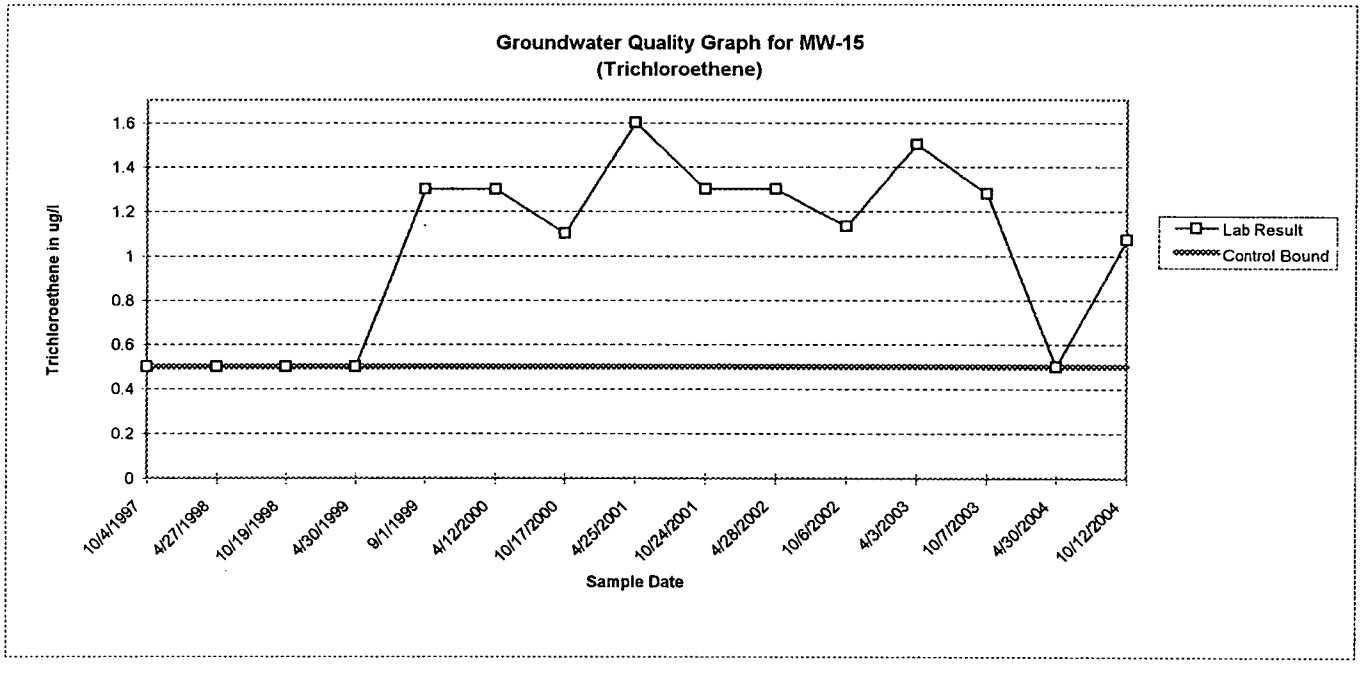

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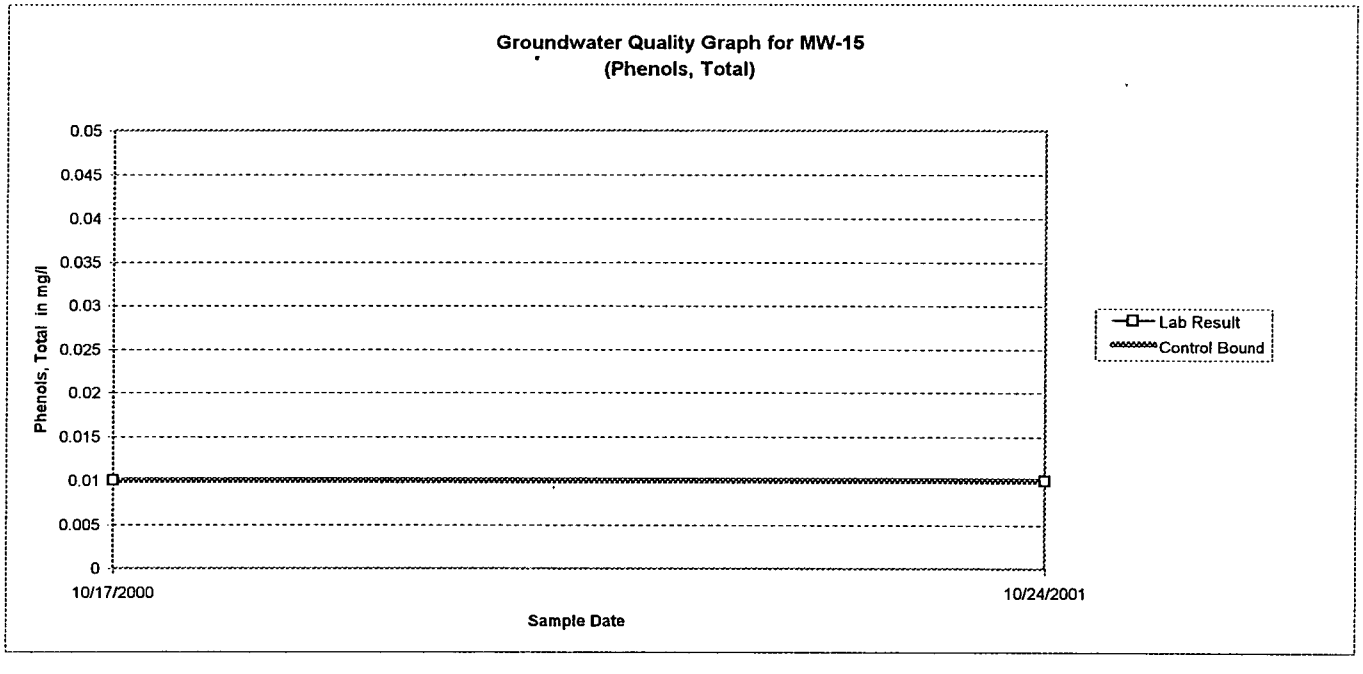

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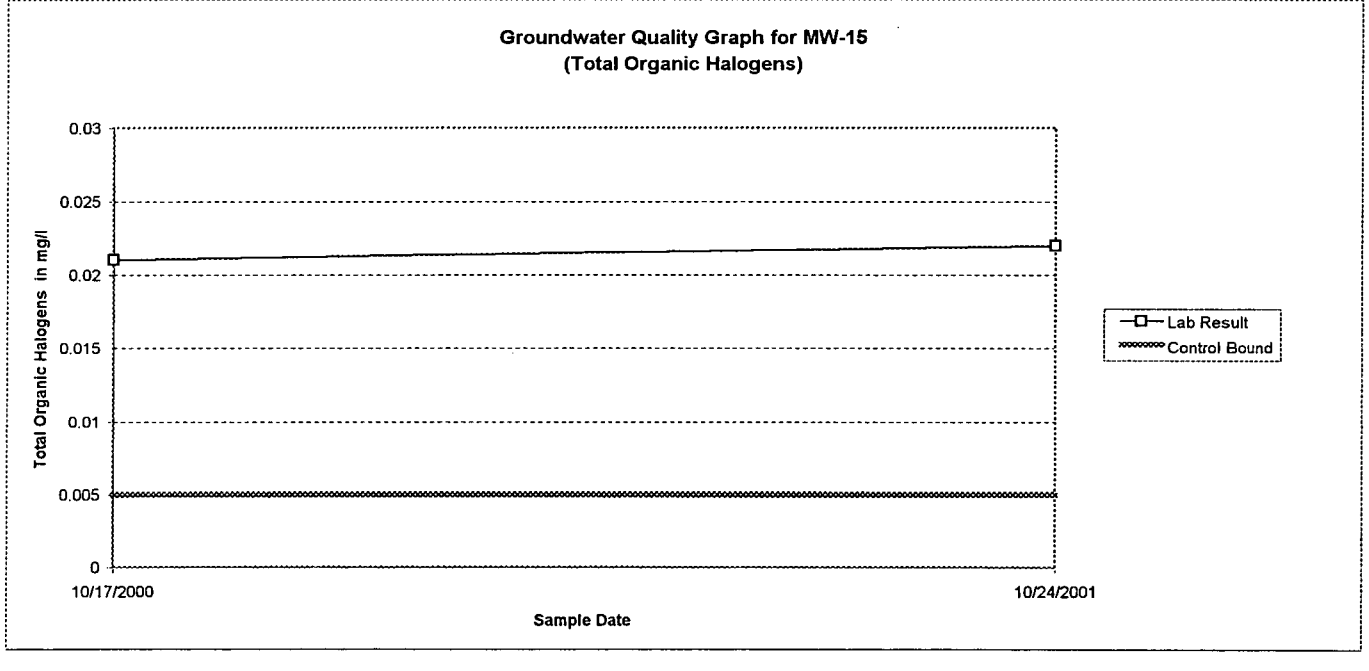

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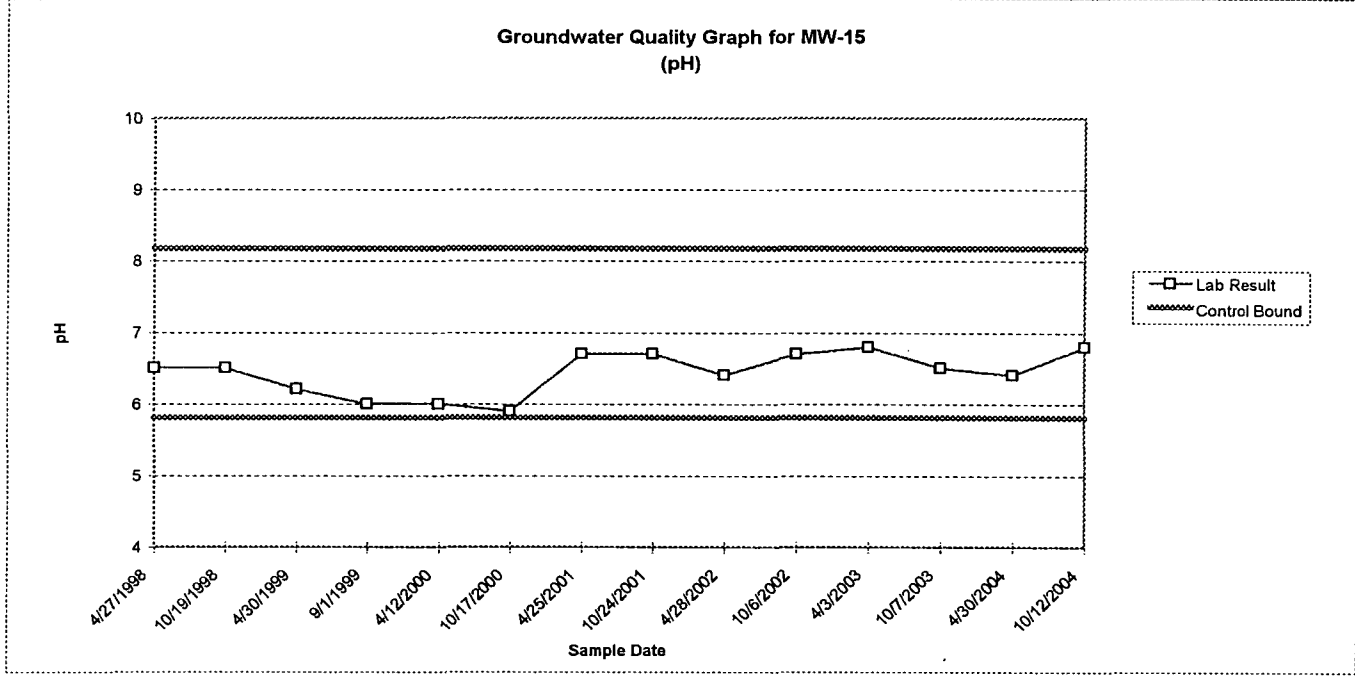

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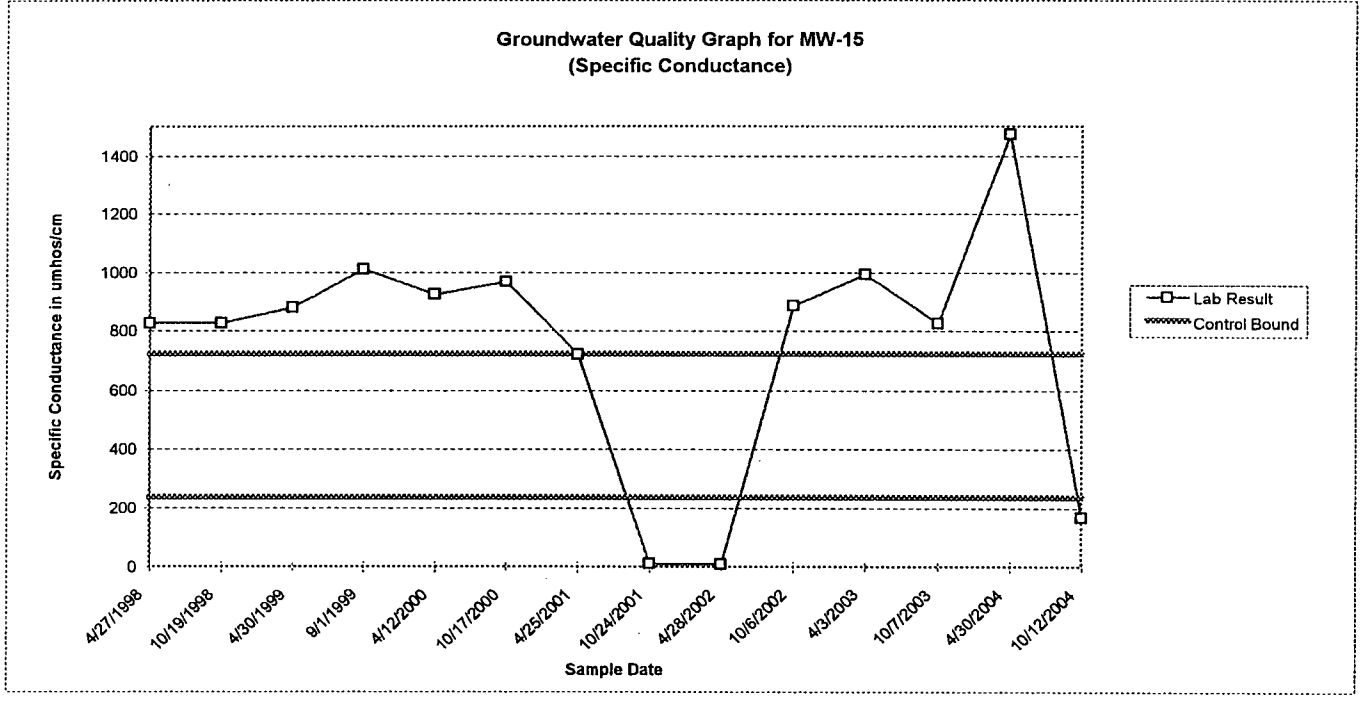

NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-14

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. ***MW-14 (Down-gradient)***

ANALYSIS PERFORMED BY: ***TestAmerica Laboratories*** ***SAMPLED BY:*** ***Plymouth County Landfill Personnel***

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-14 Standard Deviation	MW-14 Mean	7/12/1996	10/10/1996	1/21/1997	4/17/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	########
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	15.613	23.753	12	14	13	17	15	18.5	19	20	18	17.7	17
Chemical Oxygen Demand (mg/l)	7.945	0.000	5.683	5.142	24	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.028	0.106	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.021	0.055	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.559	0.405	**0.5**	**0.5**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.226	0.318	**0.5**	**0.2**	**0.2**	**0.2**	0.41	**0.2**	0.54	1.1	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.176	0.933	**0.5**	**0.5**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	1.617	1.798	**0.5**	4.2	3.3	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.968	1.345	3.1	**0.5**	1.2	1.5	1.3	1.1	1.6	2.1	1.4	1.7	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.013	0.029	-	-	-	-	0.028	-	**0.005**	-	0.052	-	0.022
Field Parameters															
pH	8.2	5.8	0.4	6.6	6.6	6.7	6.5	6.3	6.5	6.5	6.4	6.1	6.1	6.0	6.3
Specific Conductance (umhos/cm)	723	236	161	788	528	690	582	698	682	764	831	913	900	914	808

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-14

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. ***MW-14*** ***(Down-gradient)***

ANALYSIS PERFORMED BY: ***TestAmerica Laboratories*** ***SAMPLED BY:*** ***Plymouth County Landfill Personnel***

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-14 Standard Deviation	MW-14 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/11/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	15.613	23.753	16.8	22.6	27.9	23.1	30.9	24.8	43.4	80.6
Chemical Oxygen Demand (mg/l)	7.945	0.000	5.683	5.142	**2.5**	**2.5**	**2.5**	15	7.7	10	**2.5**	6.0
Ammonia Nitrogen (mg/l)	0.100	0.100	0.028	0.106	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.22	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.021	0.055	0.14	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.559	0.405	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	2.69	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.226	0.318	0.4	0.5	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.176	0.933	-	-	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	1.617	1.798	-	-	-	-	-	-	**0.5**	1.79
Trichloroethene (µg/l)	0.500	0.500	0.968	1.345	1.1	1.1	1.1	**0.5**	**0.5**	**0.5**	4.25	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	**0.01**	**0.01**	**0.01**	-	**0.01**	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.013	0.029	-	0.041	0.038	0.025	-	0.023	0.030	-
Field Parameters												
pH	8.2	5.8	0.4	6.6	7.0	6.8	6.5	7	7	7.2	7	6.9
Specific Conductance (umhos/cm)	723	236	161	788	941	889	742	757	930	1050	930	419

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
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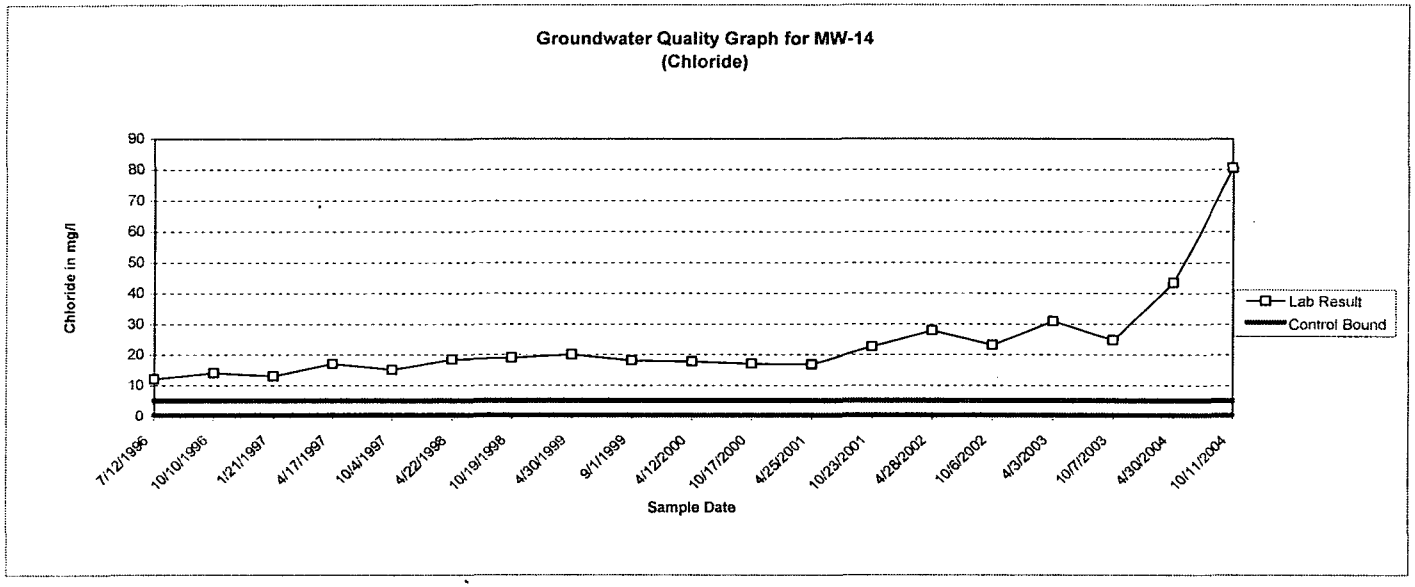

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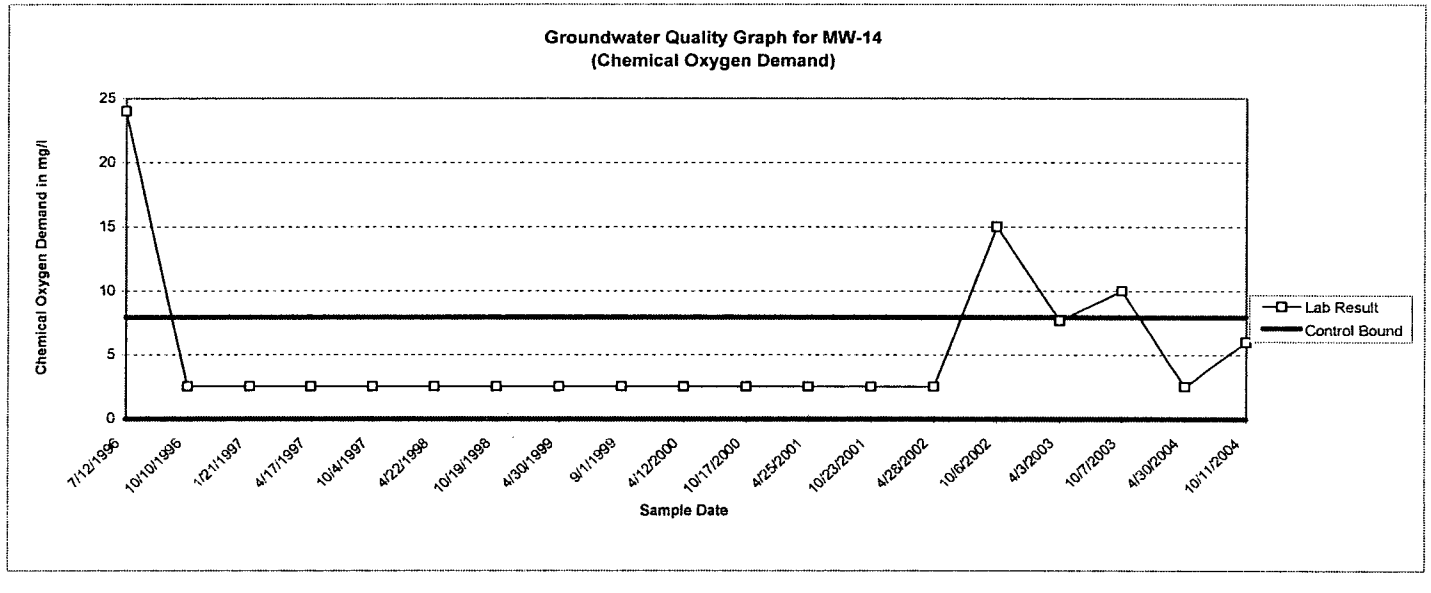

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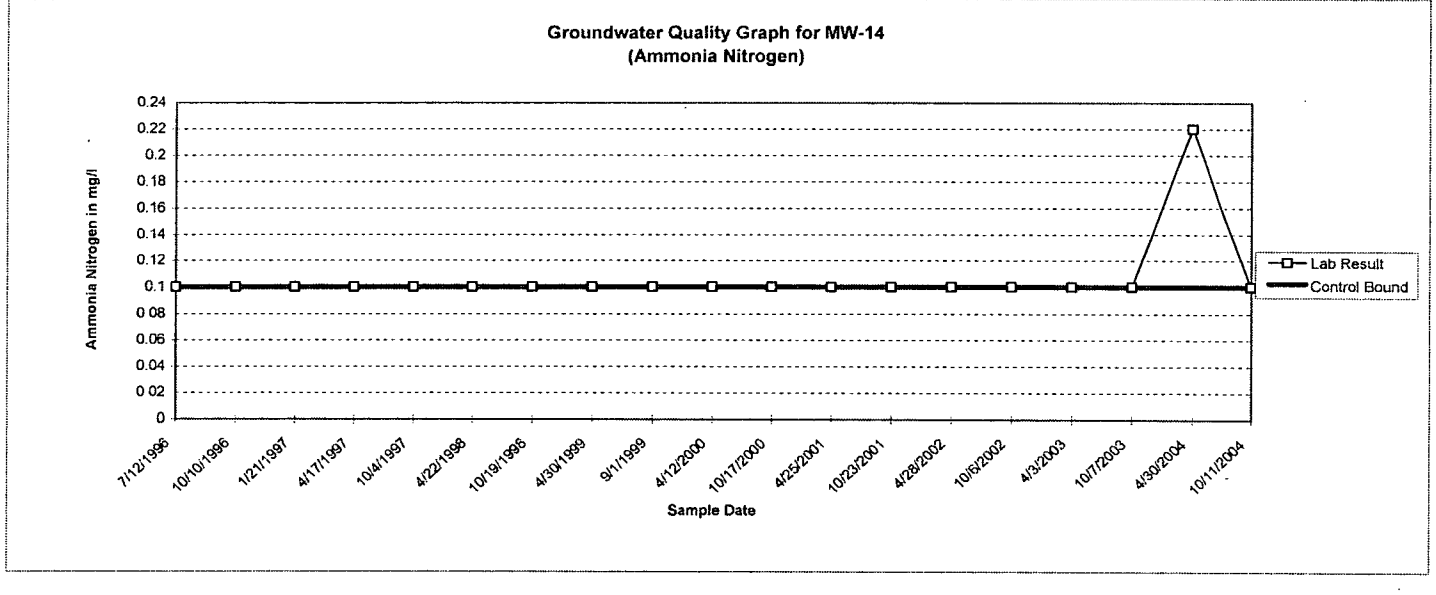

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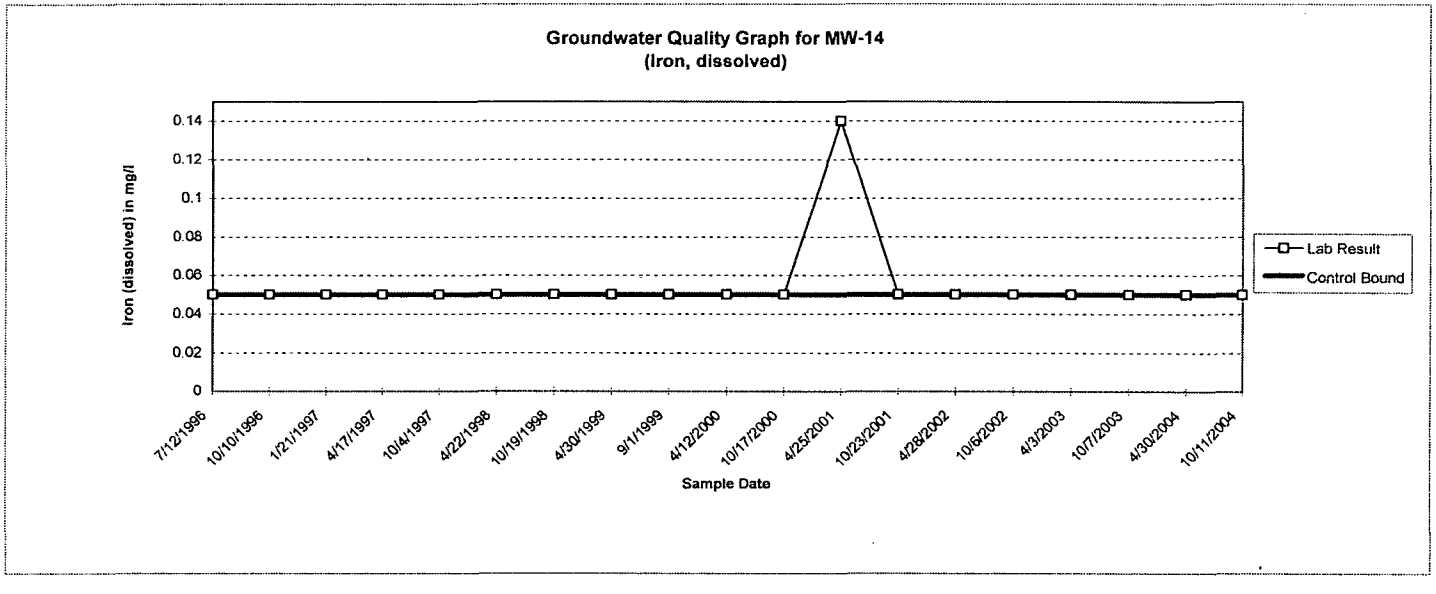

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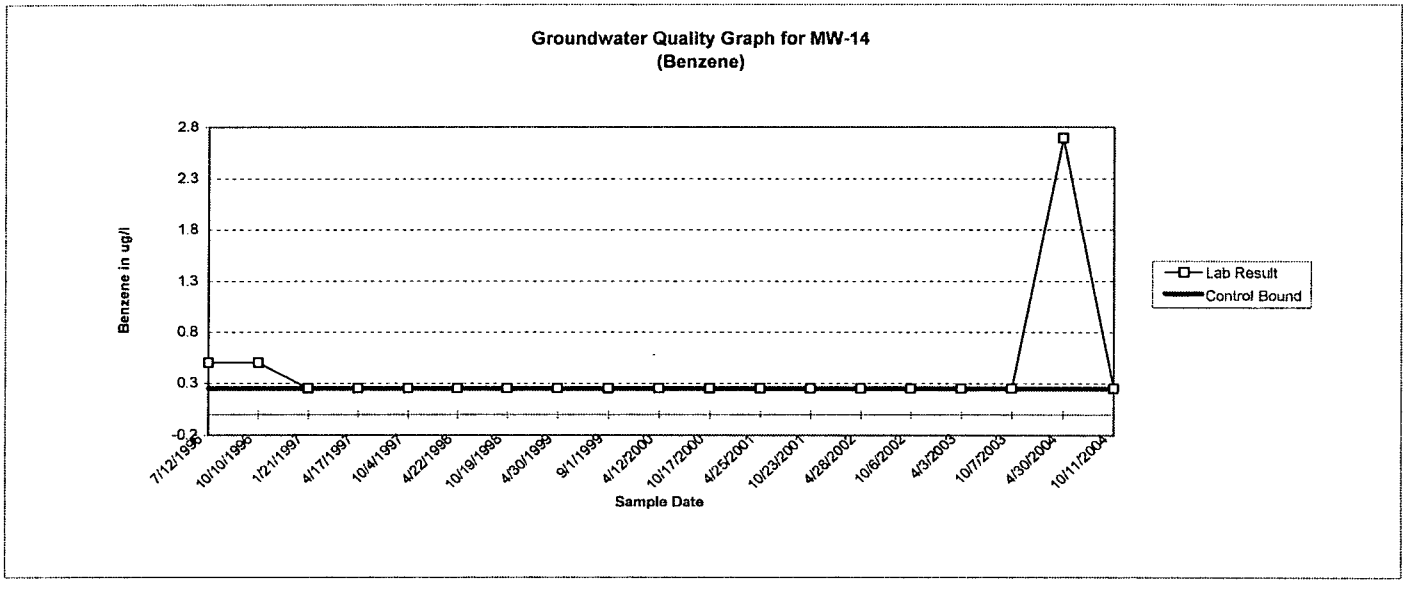

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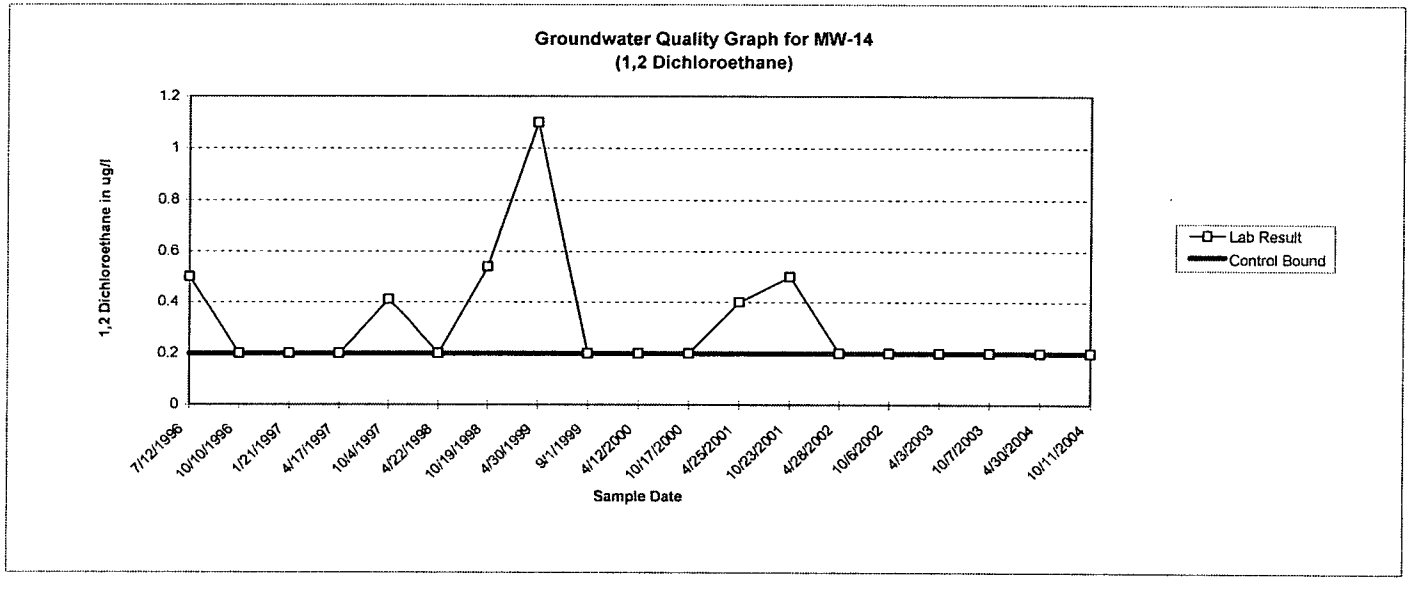

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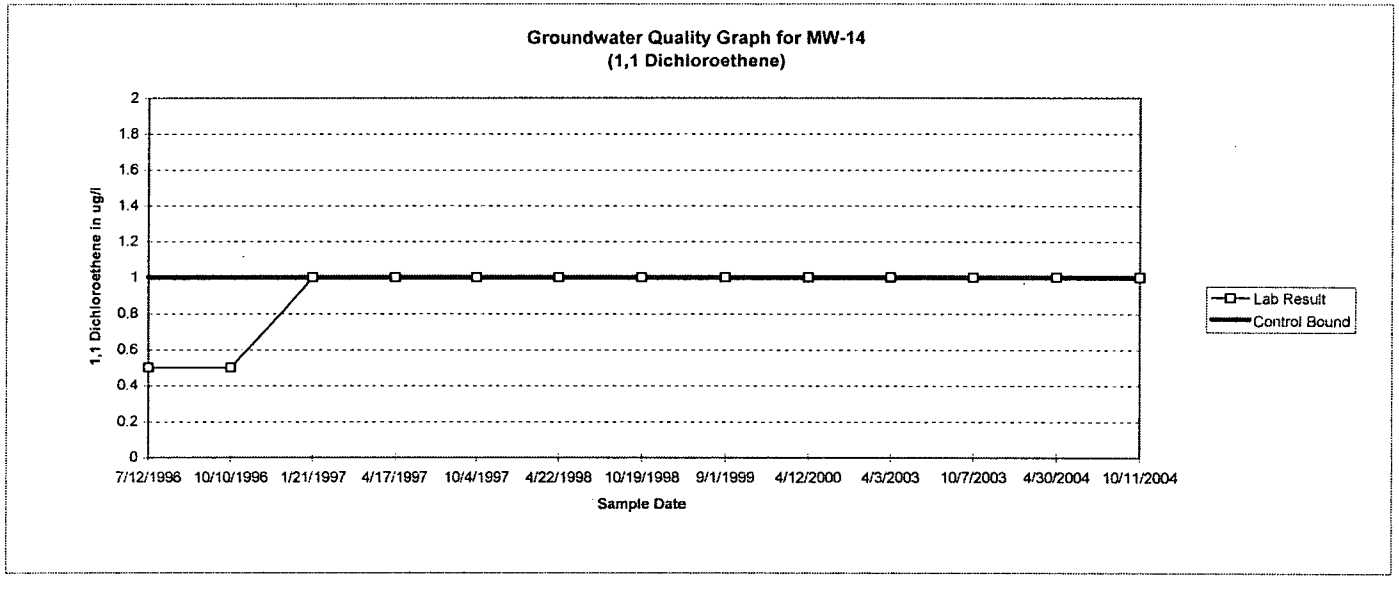

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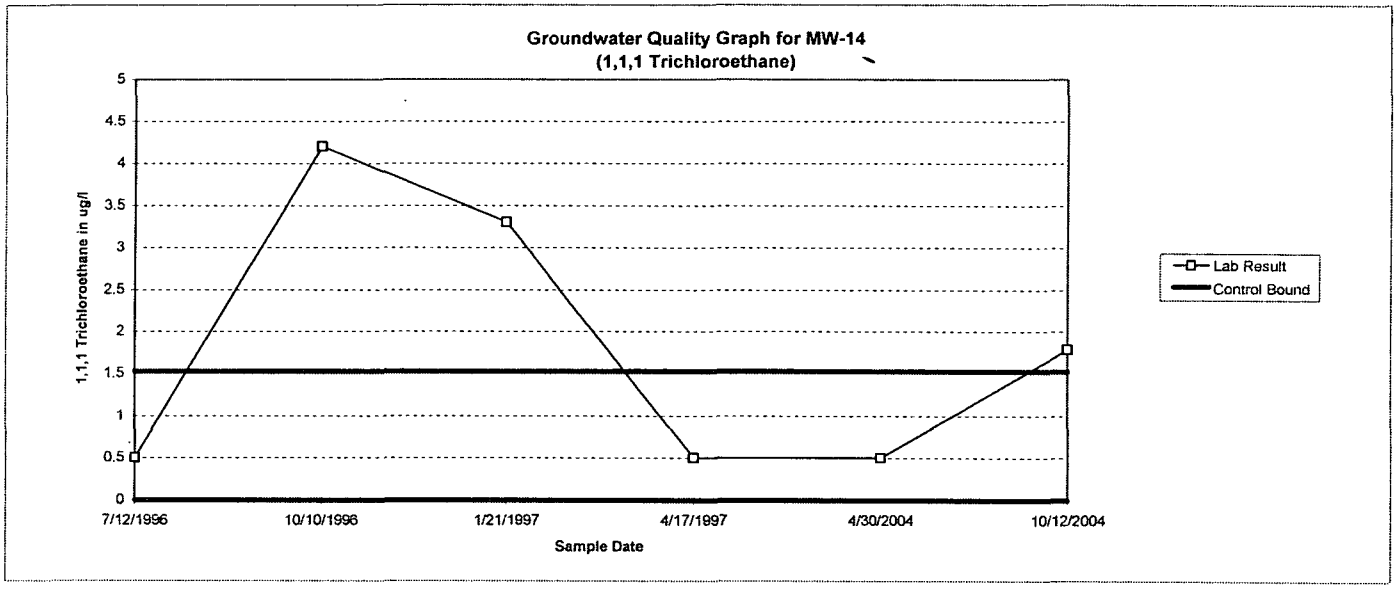

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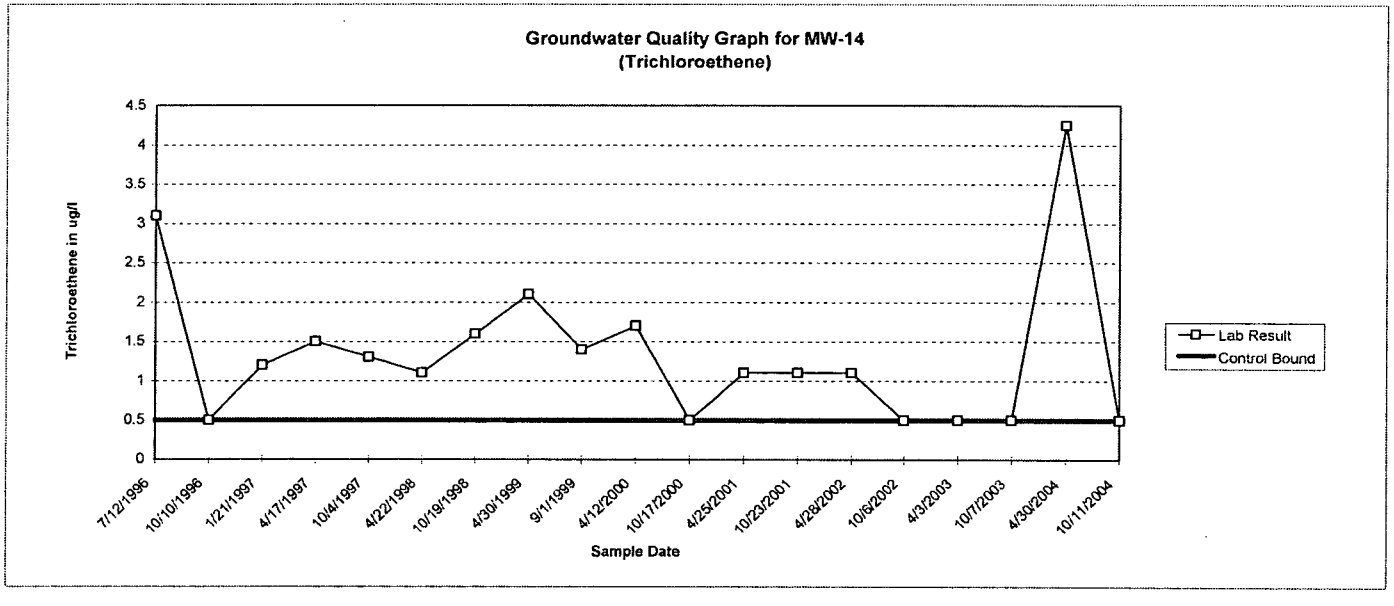

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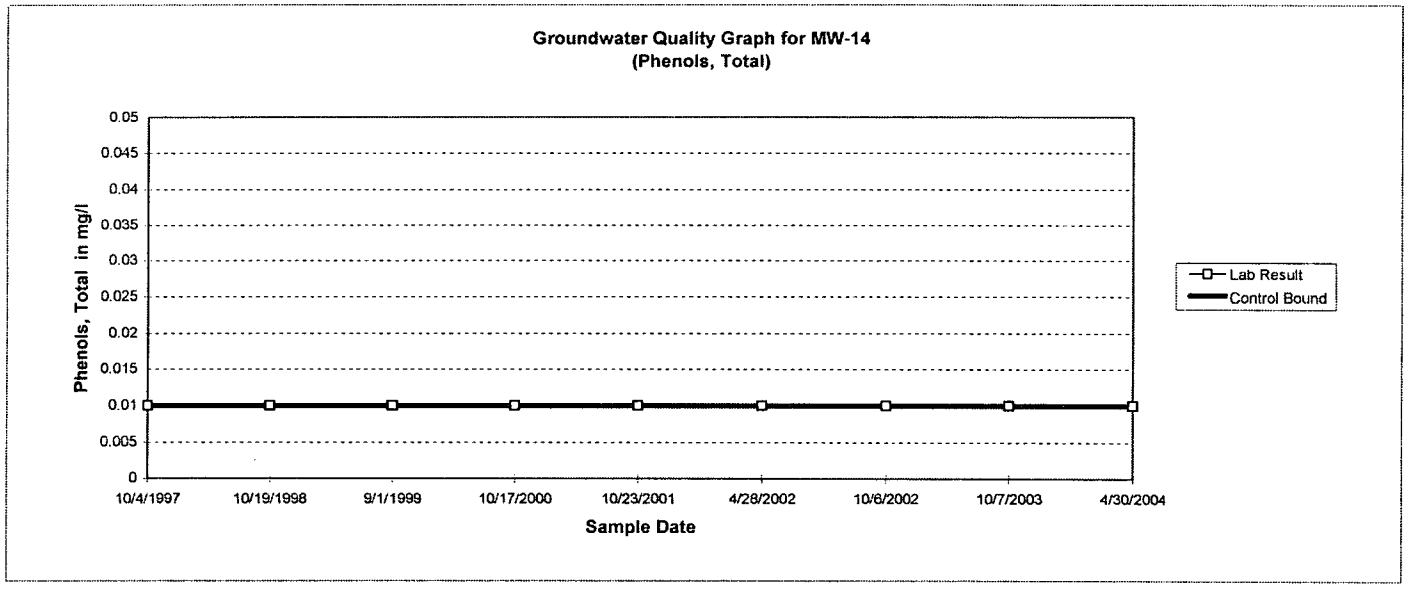

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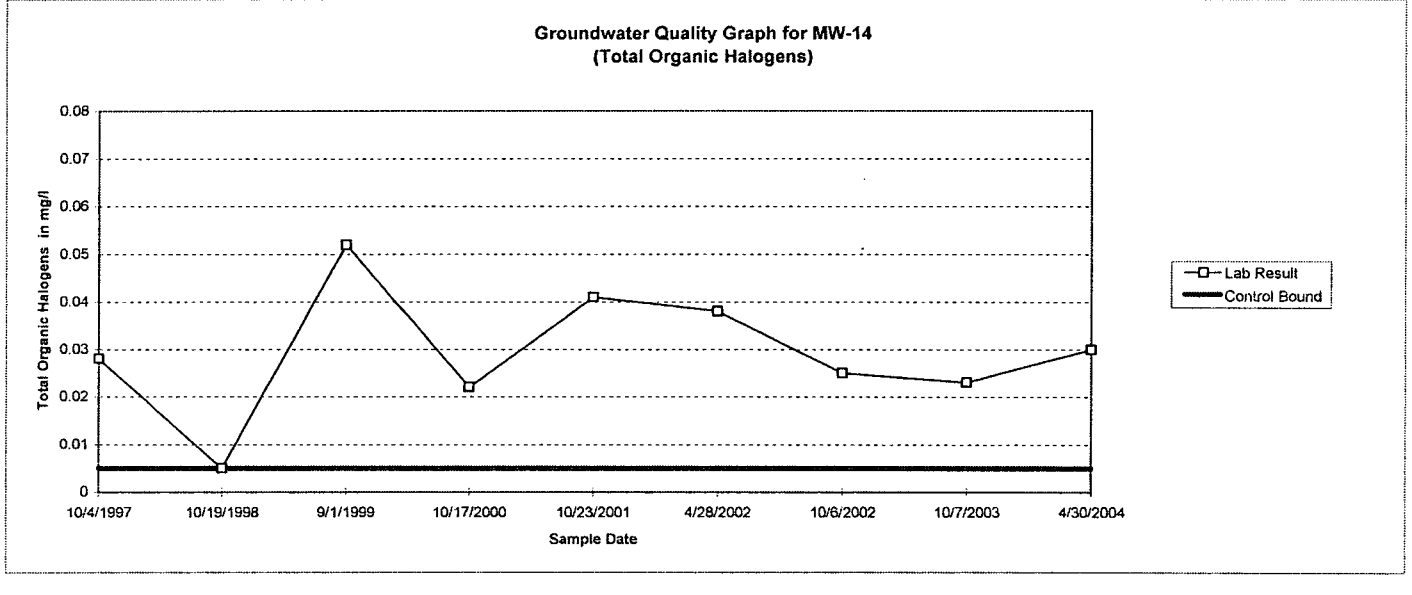

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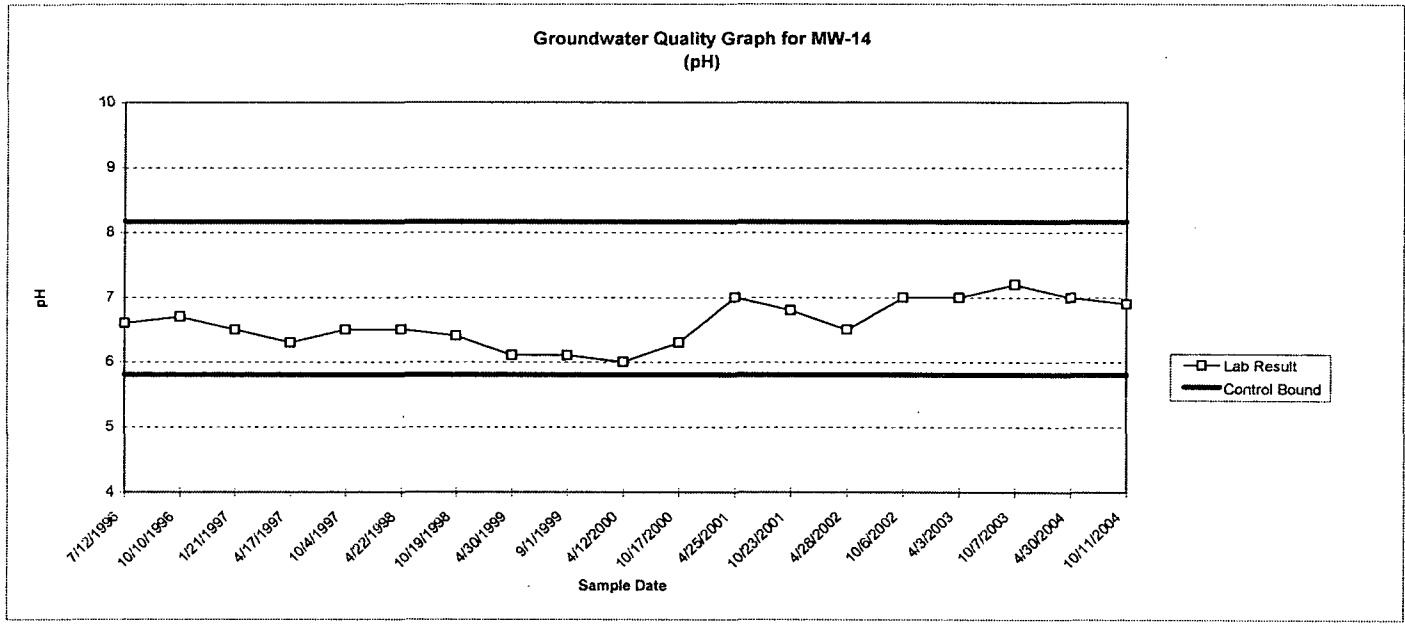
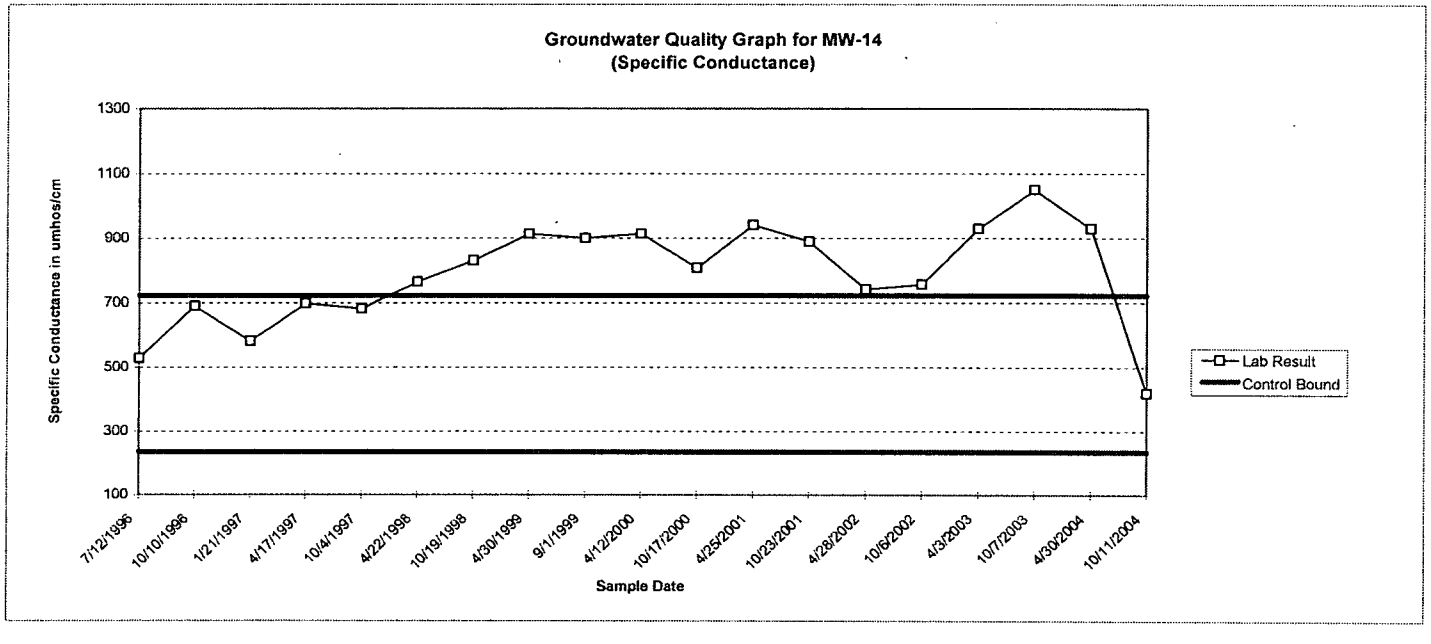


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-14

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-13 (Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-13 Standard Deviation	MW-13 Mean	7/12/1996	10/11/1996	1/21/1997	4/17/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/3/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	2.816	17.268	12	13	14	18	18	15.6	18	17	18	17.5	19.9
Chemical Oxygen Demand (mg/l)	7.945	0.000	14.080	8.679	63	**2.5**	7.5	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	22	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.023	0.105	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.2	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	1.051	0.703	0.9	3.4	3.6	**0.05**	0.49	0.20	0.05	0.05	0.72	1.05	**0.05**
Benzene (µg/l)	0.250	0.250	0.110	0.306	**0.5**	**0.5**	**0.25**	**0.25**	-	-	-	-	-	-	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.100	0.233	**0.5**	**0.2**	**0.2**	**0.2**	-	-	-	-	-	-	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.258	0.833	**0.5**	**0.5**	**1.0**	**1.0**	-	-	-	-	-	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.044	0.022	-	-	-	-	**0.005**	-	**0.005**	-	0.138	-	**0.005**
Field Parameters															
pH	8.2	5.8	0.4	6.7	6.5	6.8	6.8	6.6	6.4	6.5	6.6	6.4	6.1	6.2	5.8
Specific Conductance (umhos/cm)	723	236	136	562	390	475	479	645	548	584	525	605	558	517	536

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-13* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-13 Standard Deviation	MW-13 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	2.816	17.268	15.1	16.7	16.6	16.5	24.8	19.7	19.3	18.4
Chemical Oxygen Demand (mg/l)	7.945	0.000	14.080	8.679	6.3	**2.5**	8.2	8.4	10	**2.5**	12	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.023	0.105	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	1.051	0.703	0.16	**0.05**	0.71	0.85	**0.05**	0.88	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.110	0.306	**0.25**	**0.25**	-	-	**0.25**	**0.25**	-	-
1,2-Dichloroethane (µg/l)	0.200	0.200	0.100	0.233	**0.2**	**0.2**	-	-	**0.2**	**0.2**	-	-
1,1-Dichloroethene (µg/l)	1.000	1.000	0.258	0.833	-	-	-	-	**1.0**	**1.0**	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.000	0.500	**0.5**	**0.5**	-	-	**0.5**	**0.5**	-	-
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	**0.01**	**0.01**	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.044	0.022	-	**0.005**	**0.005**	**0.005**	0.023	-	**0.005**	-
Field Parameters												
pH	8.2	5.8	0.4	6.7	6.8	7.1	6.7	7.3	7.0	7.5	6.6	7.2
Specific Conductance (umhos/cm)	723	236	136	562	648	530	423	499	930	646	792	346

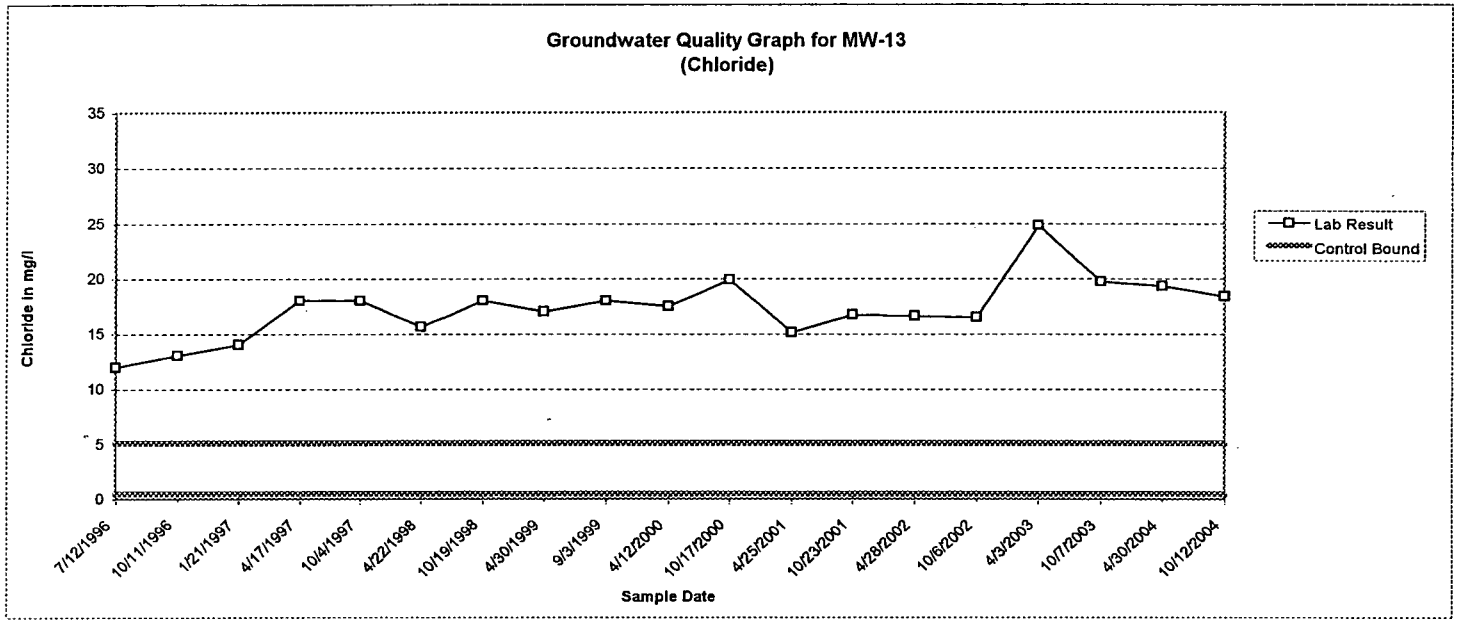
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

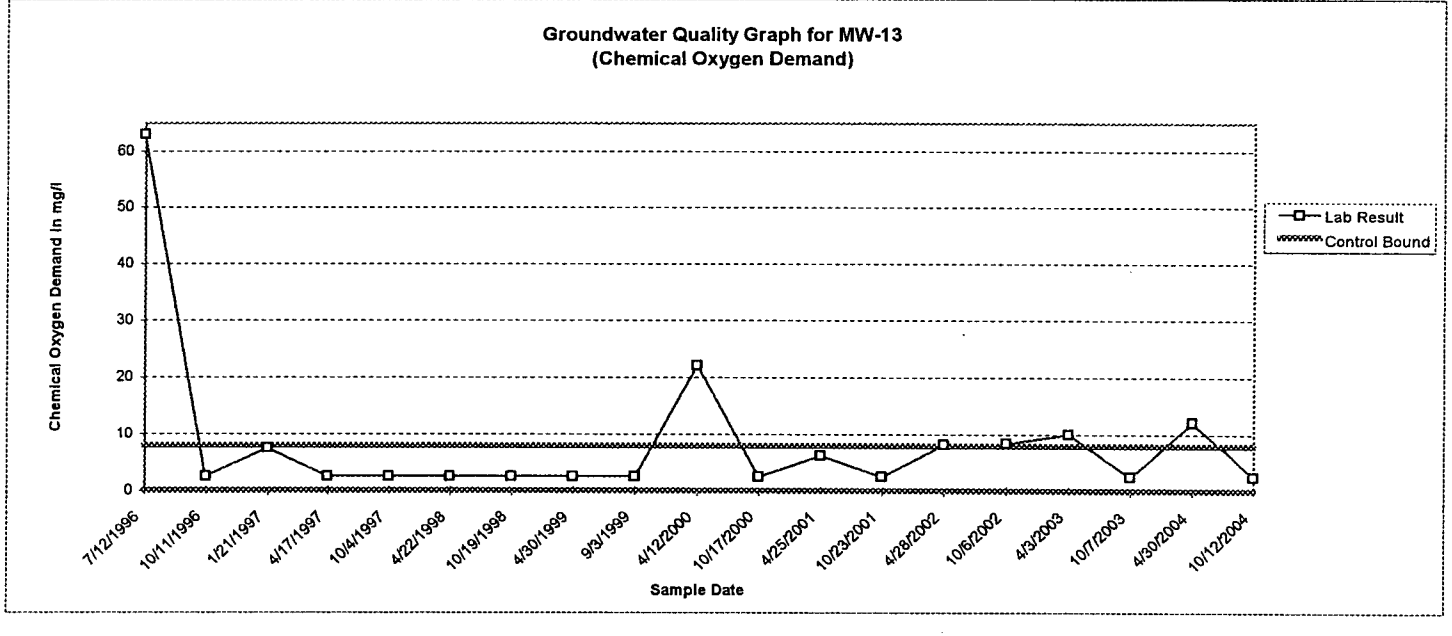


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

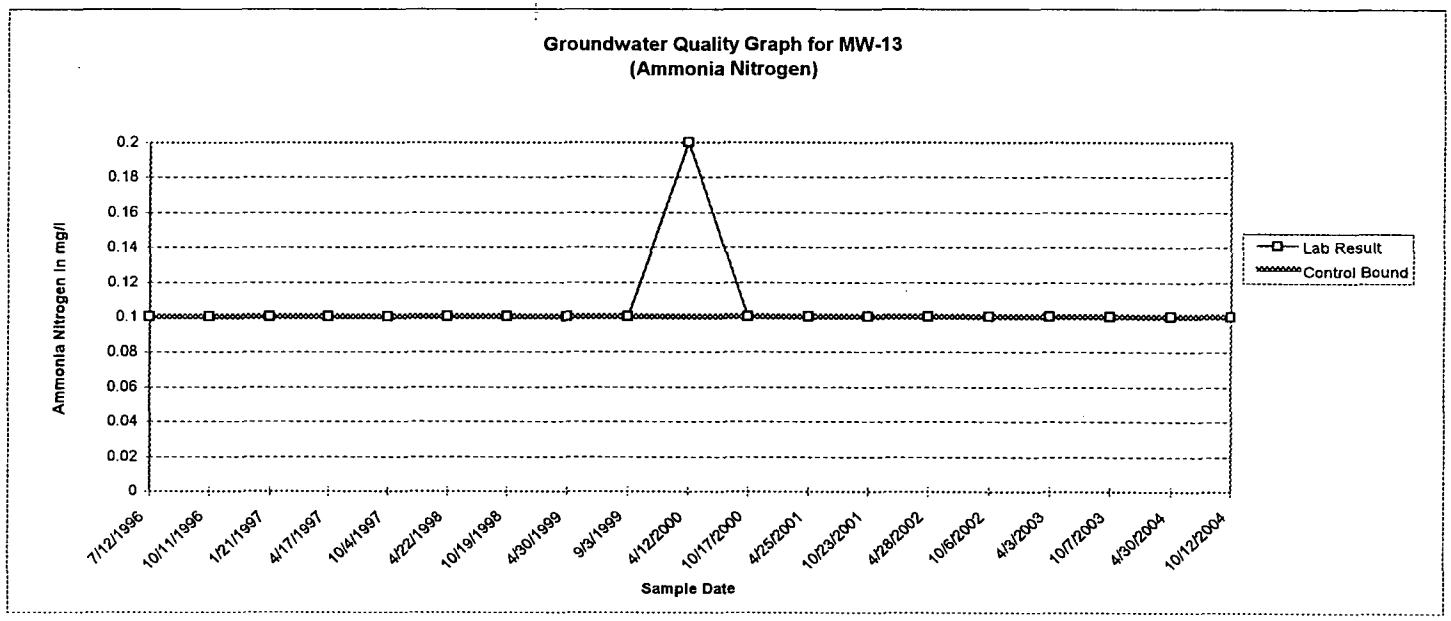


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

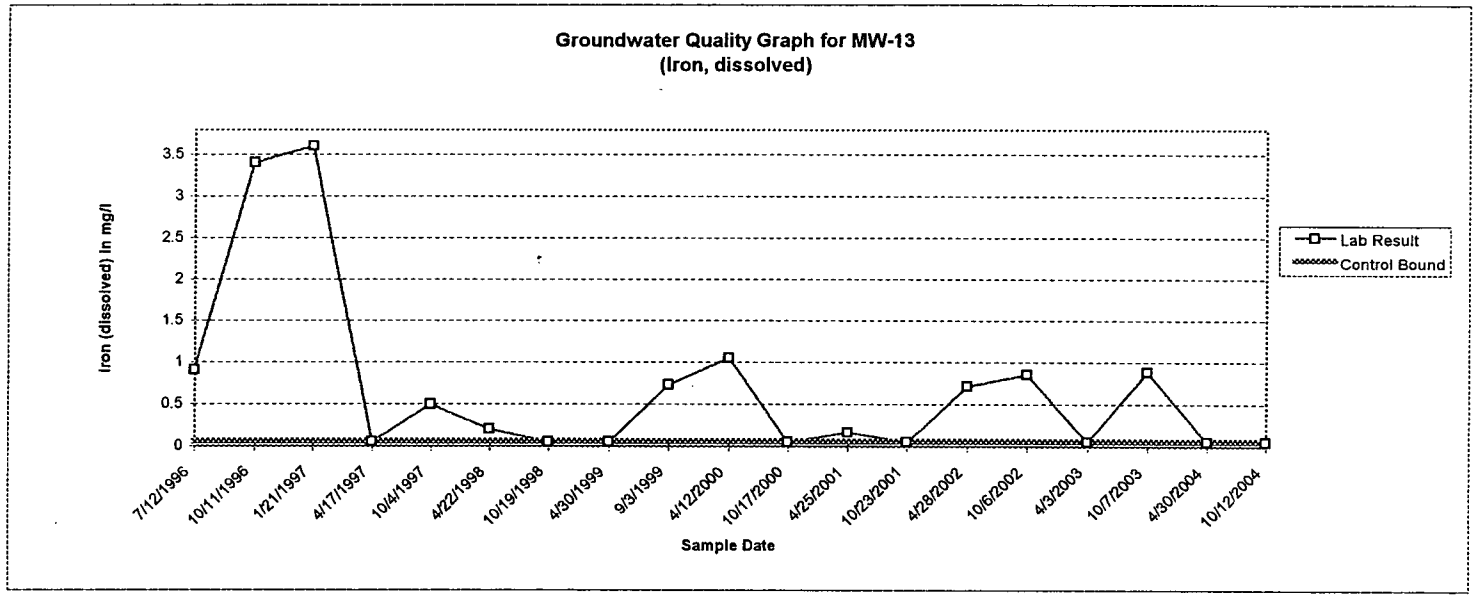


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

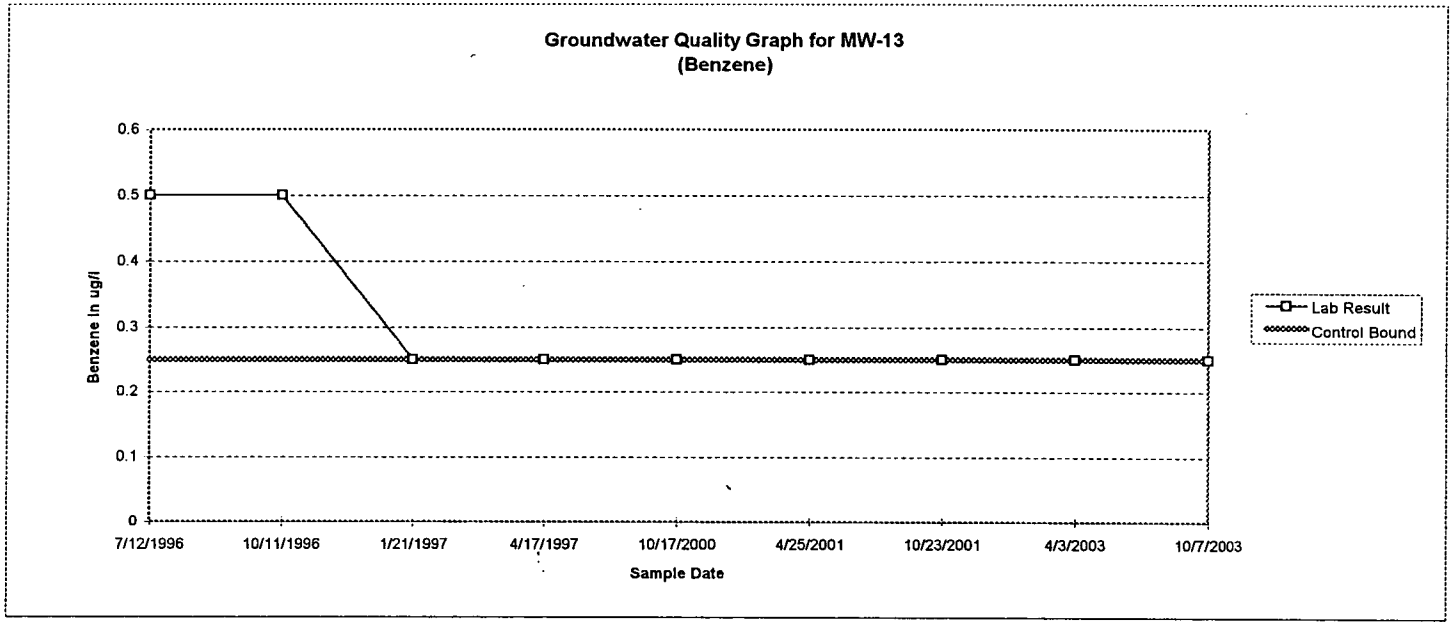


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
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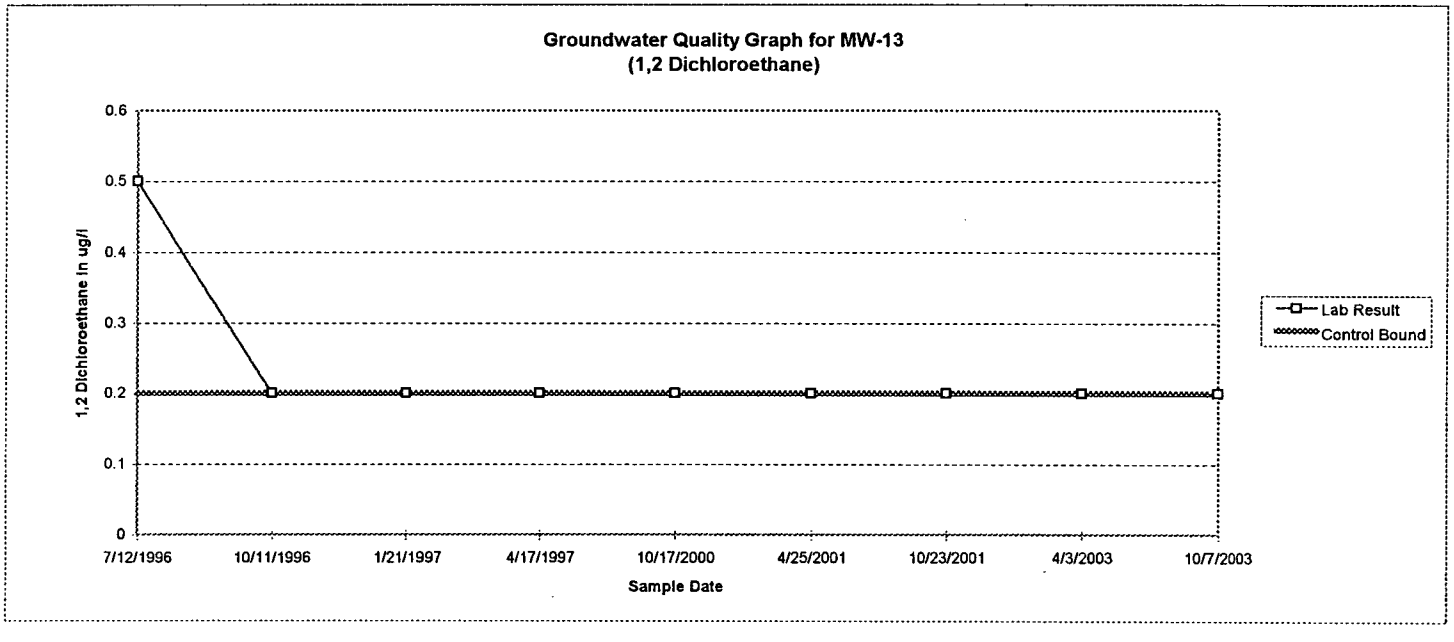
ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

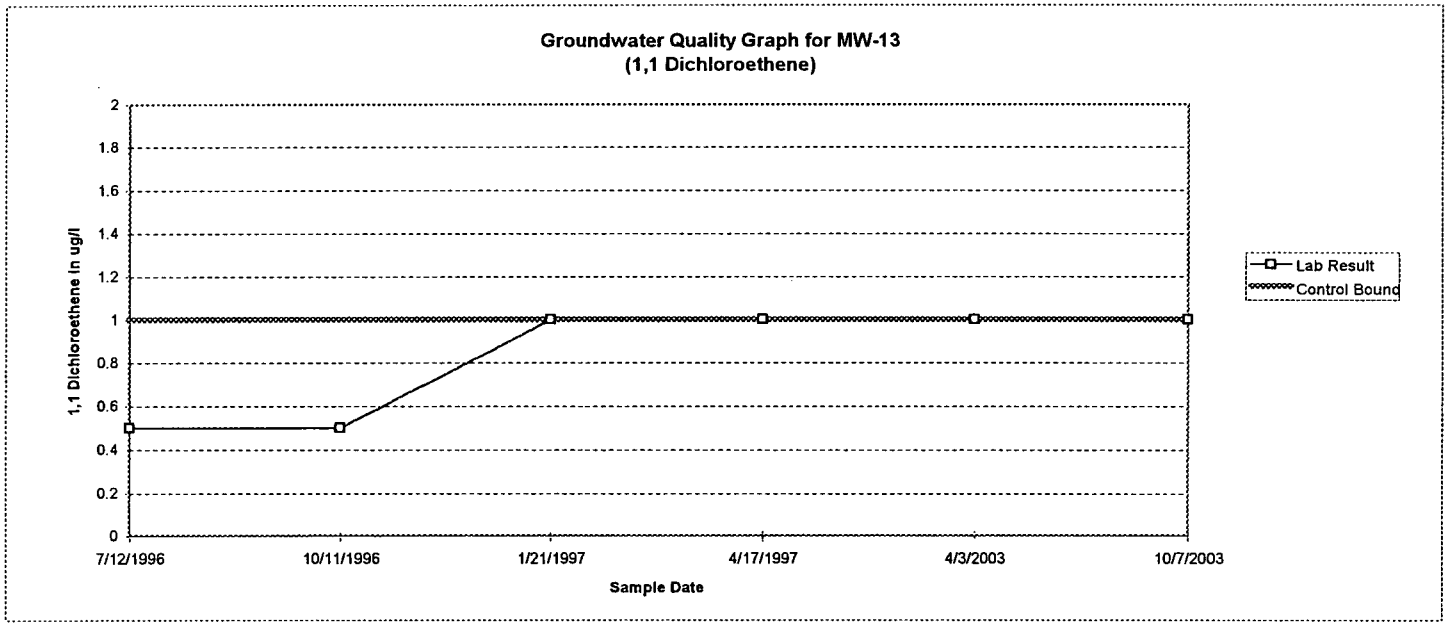


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

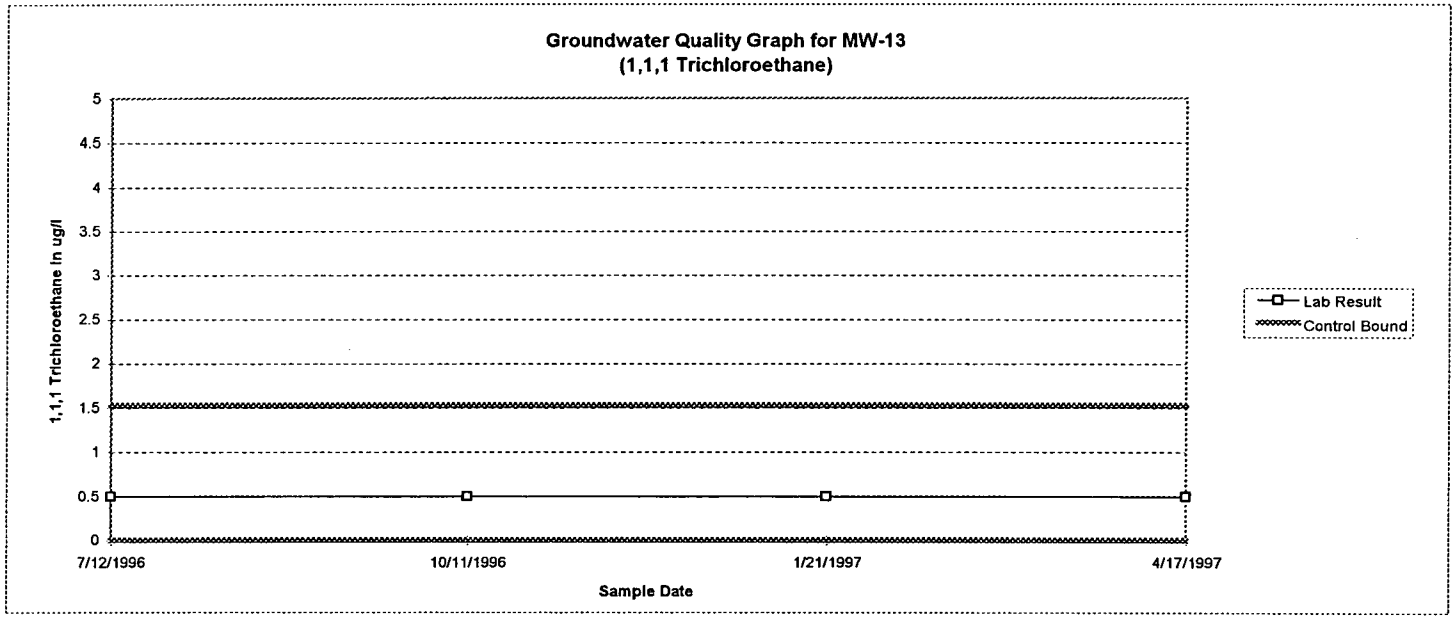


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



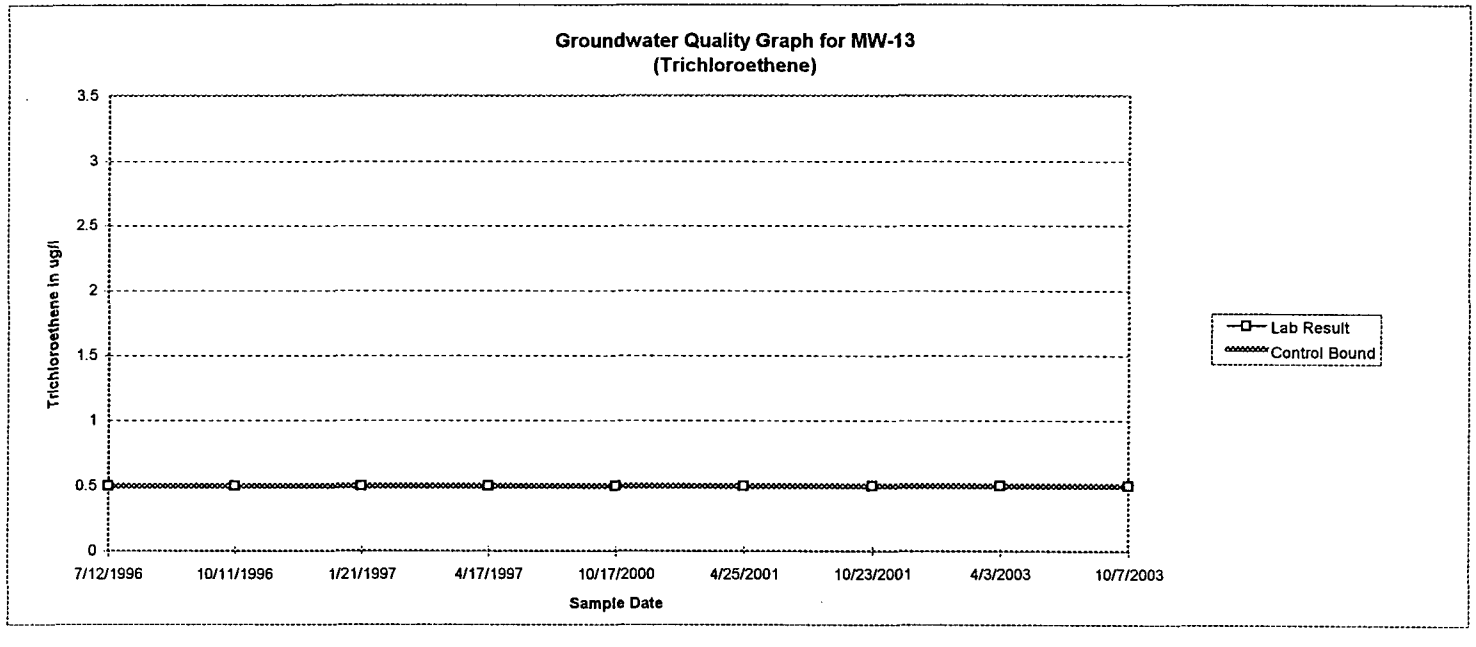
NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

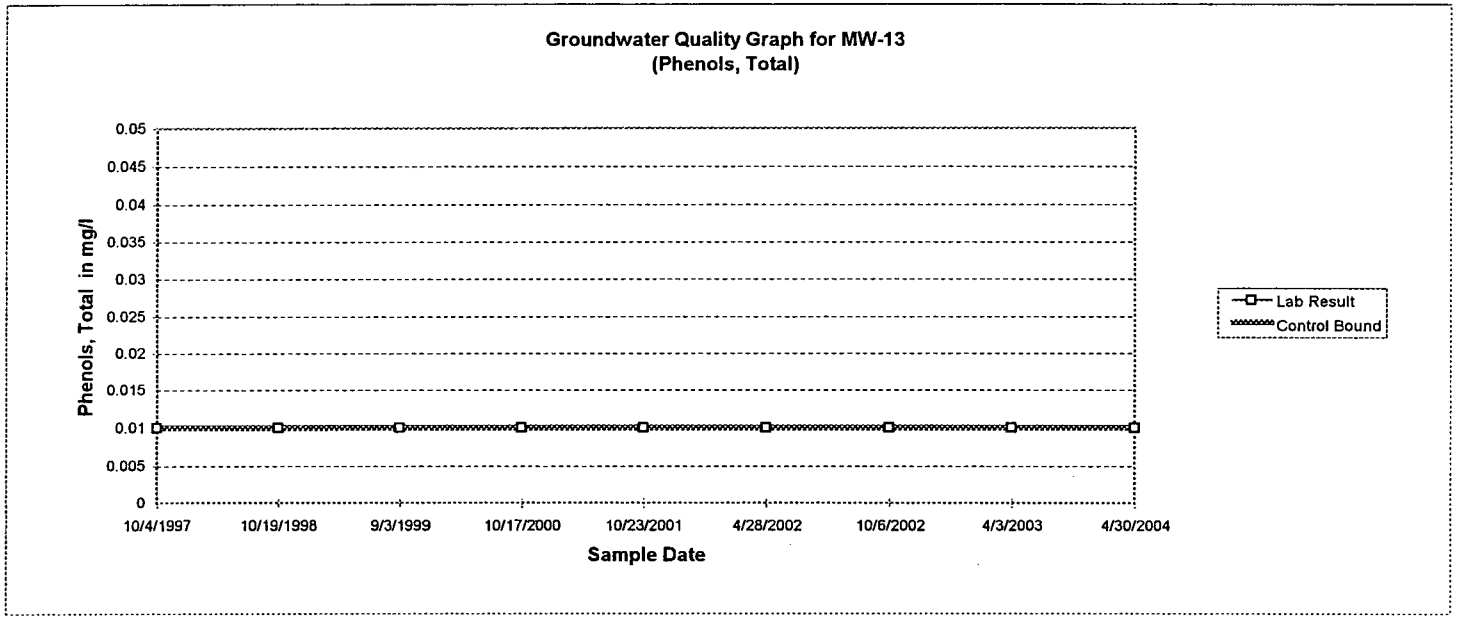


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

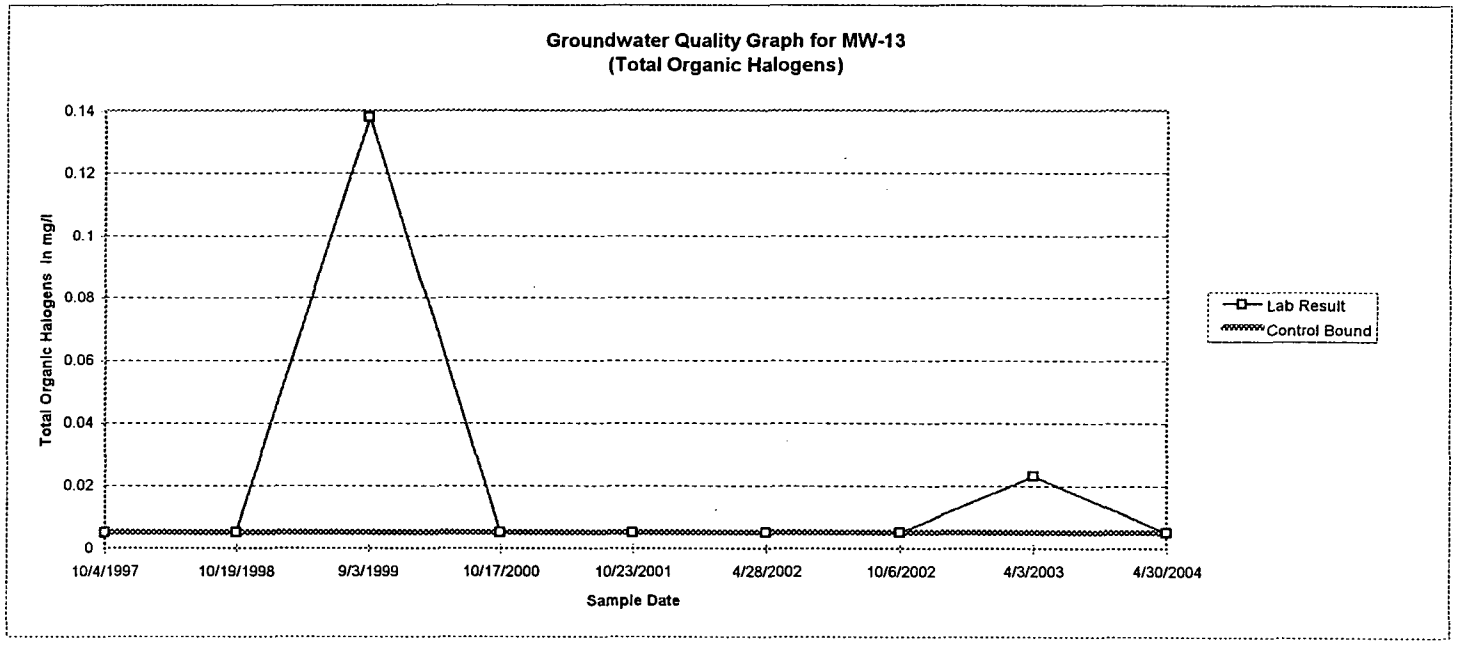


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

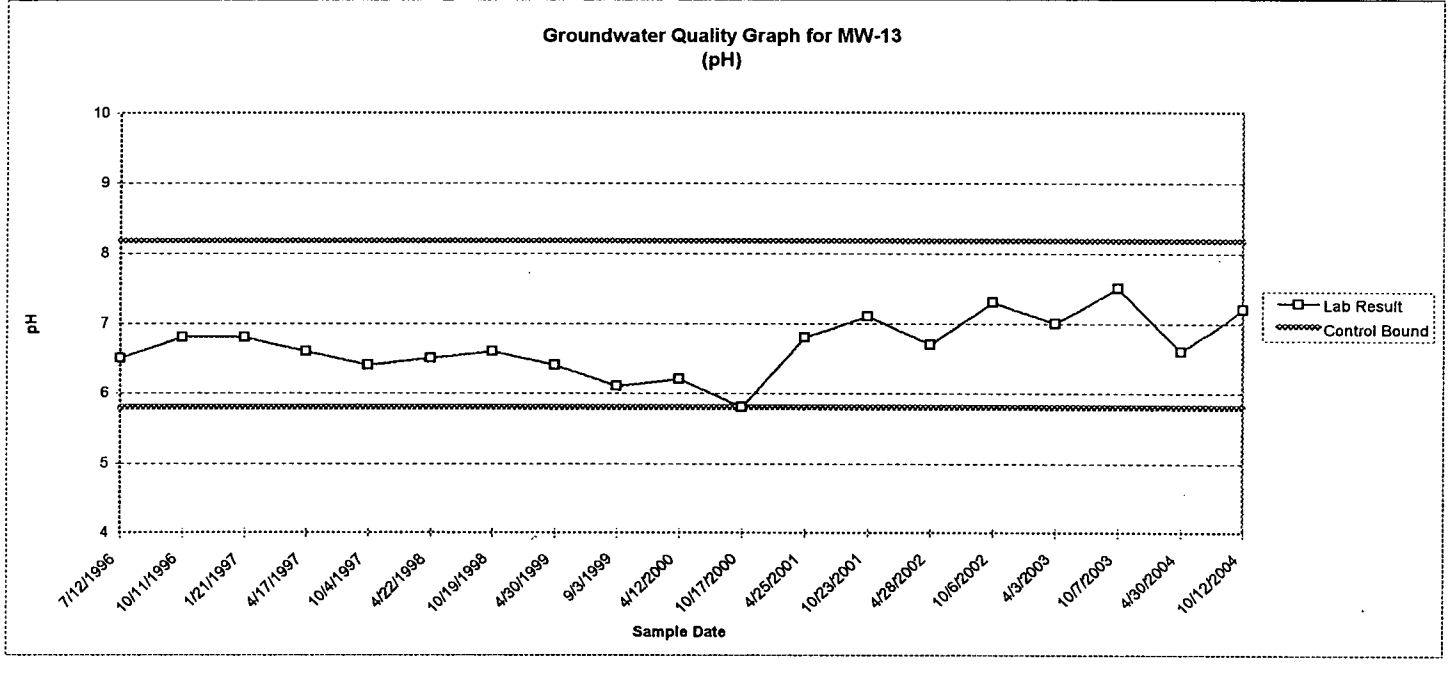


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

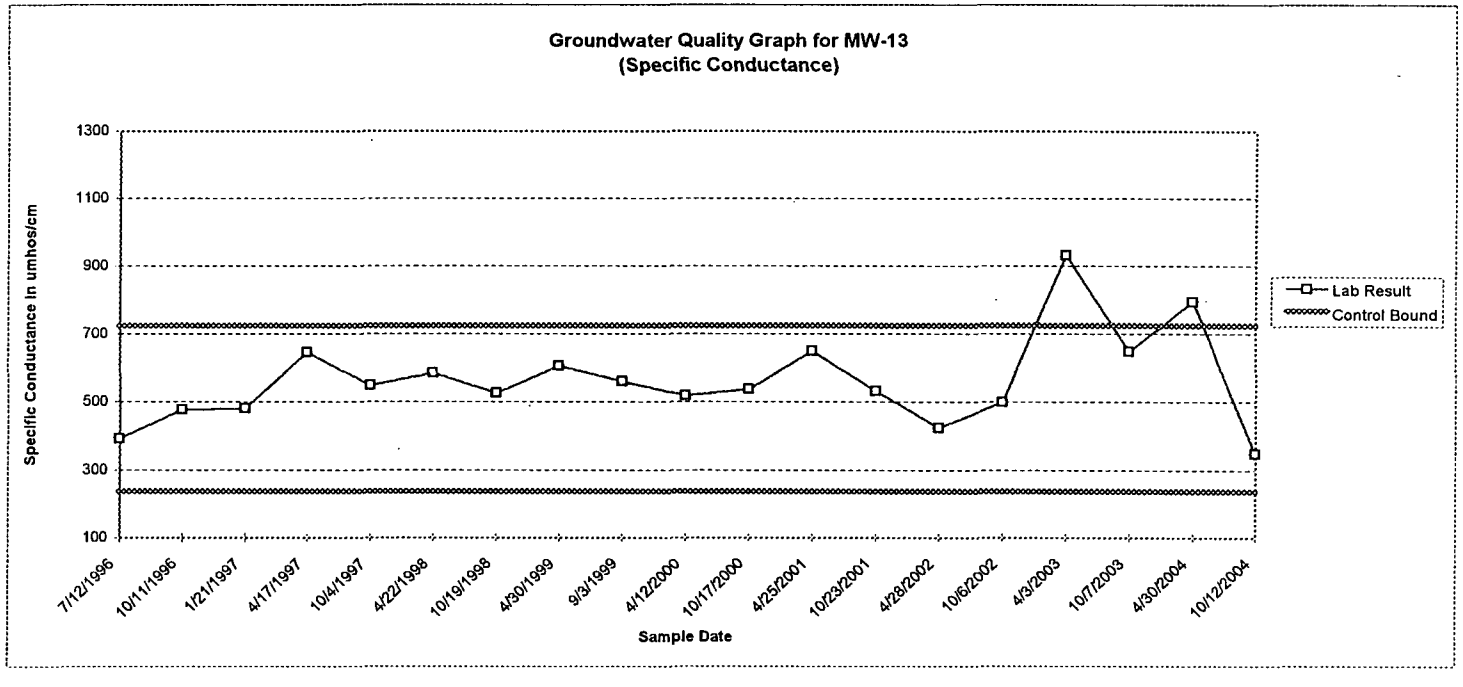


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-13

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. ***MW-12*** ***(Down-gradient)***

ANALYSIS PERFORMED BY: ***TestAmerica Laboratories*** *SAMPLED BY:* ***Plymouth County Landfill Personnel***

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-12 Standard Deviation	MW-12 Mean	10/10/1996	1/21/1997	4/17/1997	7/15/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/3/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	22.115	20.195	5.4	6.4	7.5	6.8	6.6	8.1	7.4	9.6	8.3	6.4	7.9
Chemical Oxygen Demand (mg/l)	7.945	0.000	5.239	5.379	7.0	11	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.025	0.106	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.21	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	1.013	2.670	**0.5**	2.1	2.2	2.1	2.4	2.7	3.1	3.3	3.0	3	3.5
1,2-Dichloroethane (µg/l)	0.200	0.200	0.266	0.263	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.134	0.964	**0.5**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.791	1.217	1.8	2.1	**0.5**	1.9	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.815	4.928	2.8	5.5	4.9	4.7	4.7	4.8	5.4	5.6	4.8	5.3	5.4
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.016	0.055	-	-	-	-	0.083	-	0.023	-	0.064	-	0.055
Field Parameters															
pH	8.2	5.8	0.4	6.2	6.4	6.2	6.2	6.1	5.0	6.0	6	6	5.8	5.7	5.8
Specific Conductance (umhos/cm)	723	236	186	1028	1026	922	1010	1017	906	1044	1046	1102	1171	1087	1129

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-12 (Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-12 Standard Deviation	MW-12 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	22.115	20.195	8.0	16.2	17.4	27	43.1	81.1	60.4	50.1
Chemical Oxygen Demand (mg/l)	7.945	0.000	5.239	5.379	**2.5**	**2.5**	8.5	22	13	**2.5**	8.2	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.025	0.106	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	1.013	2.670	2.8	4.3	3.6	3.59	-	2.88	**0.25**	2.74
1,2-Dichloroethane (µg/l)	0.200	0.200	0.266	0.263	**0.2**	**0.2**	**0.2**	**0.2**	-	**0.2**	1.33	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.134	0.964	-	-	**1.0**	**1.0**	-	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.791	1.217	-	-	-	-	-	-	**0.5**	**0.5**
Trichloroethene (µg/l)	0.500	0.500	0.815	4.928	4.7	5.6	4.6	5.35	-	3.93	6.57	4.05
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	**0.01**	**0.01**	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.016	0.055	-	0.058	0.059	0.044	0.057	-	0.054	-
Field Parameters												
pH	8.2	5.8	0.4	6.2	6.7	6.4	6.2	6.7	6.7	6.8	6.3	6.6
Specific Conductance (umhos/cm)	723	236	186	1028	1223	1165	1040	1051	1319	671	1106	496

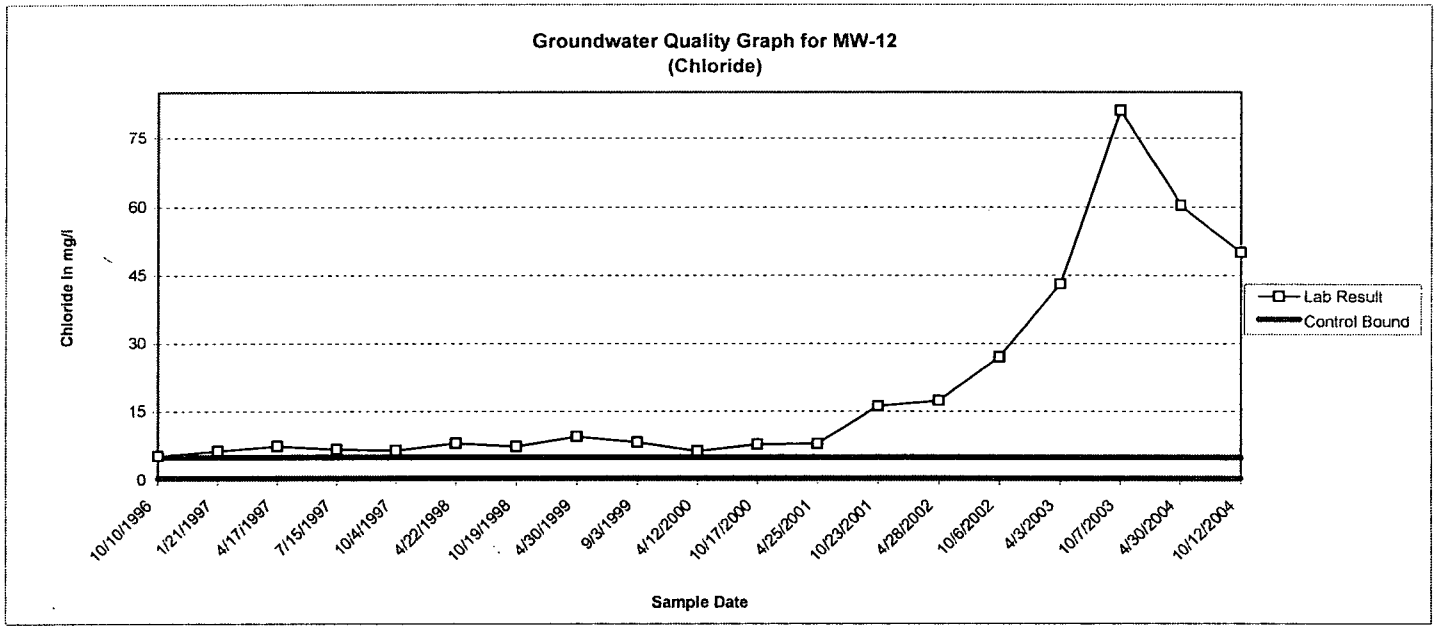
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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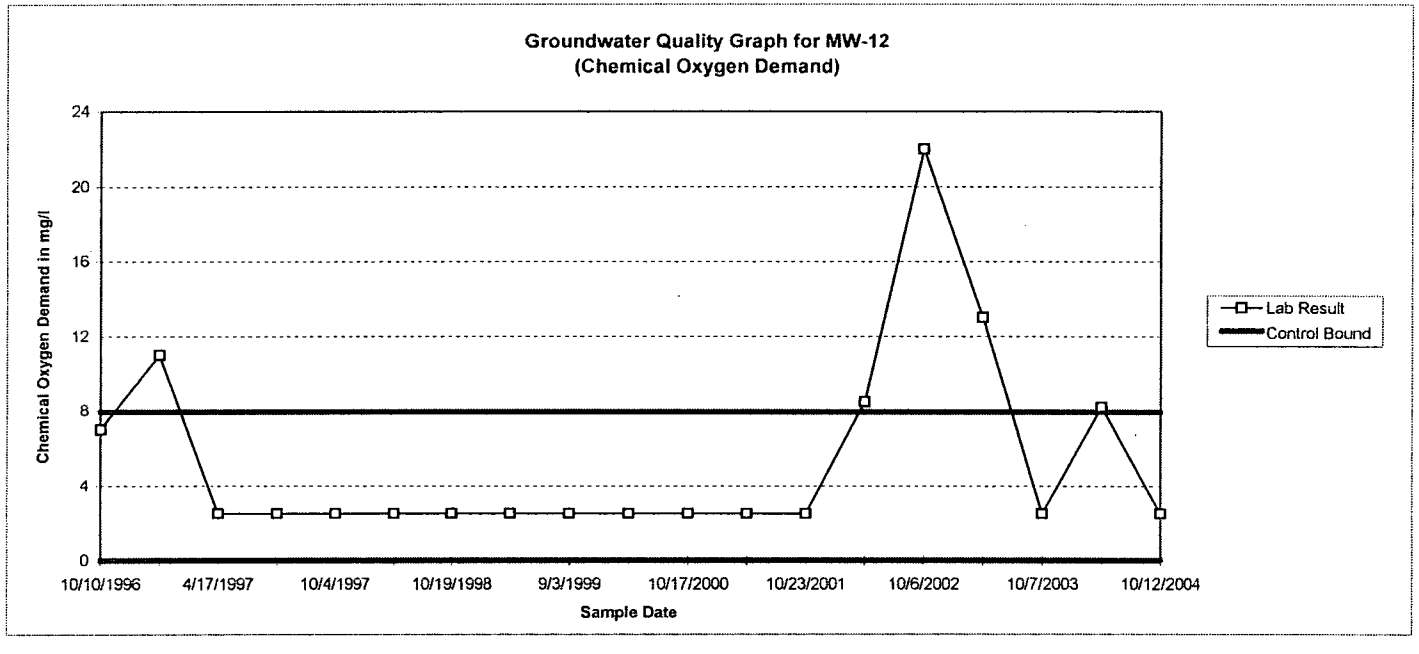

NOTE:
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ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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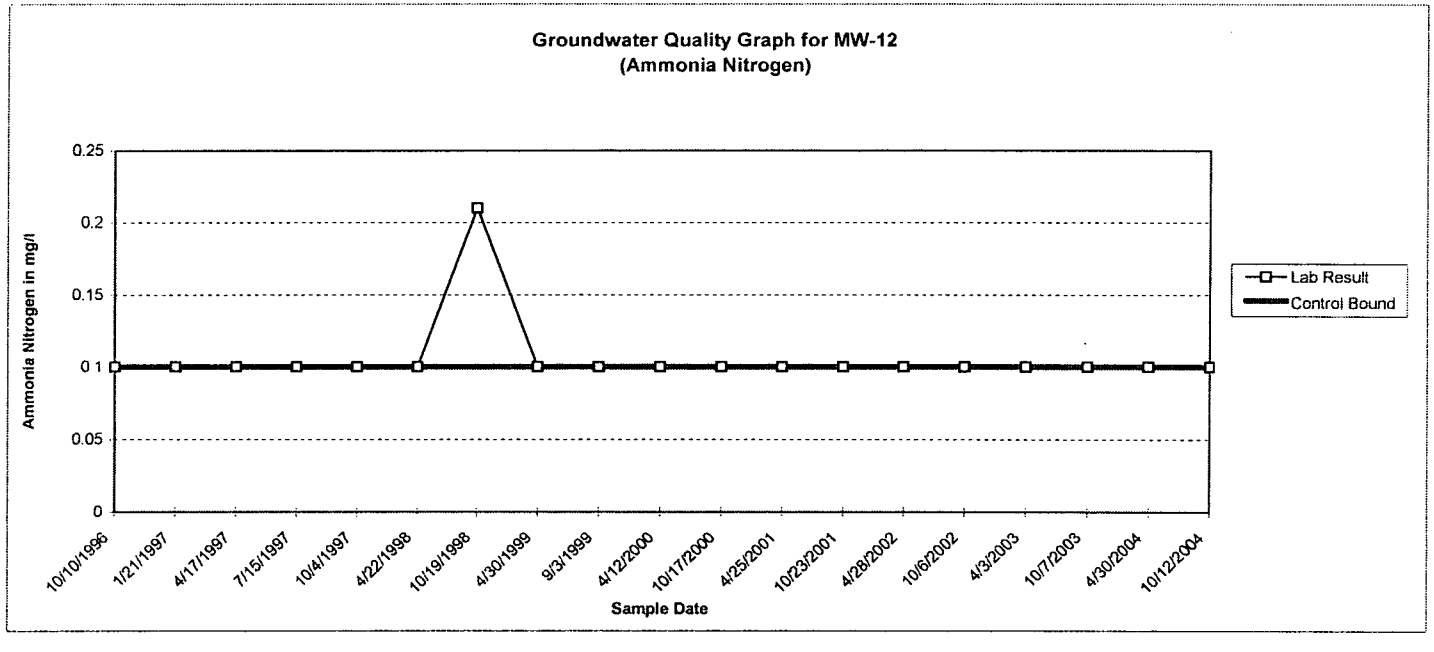

NOTE:
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2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
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ANALYSIS SHEET MW-12

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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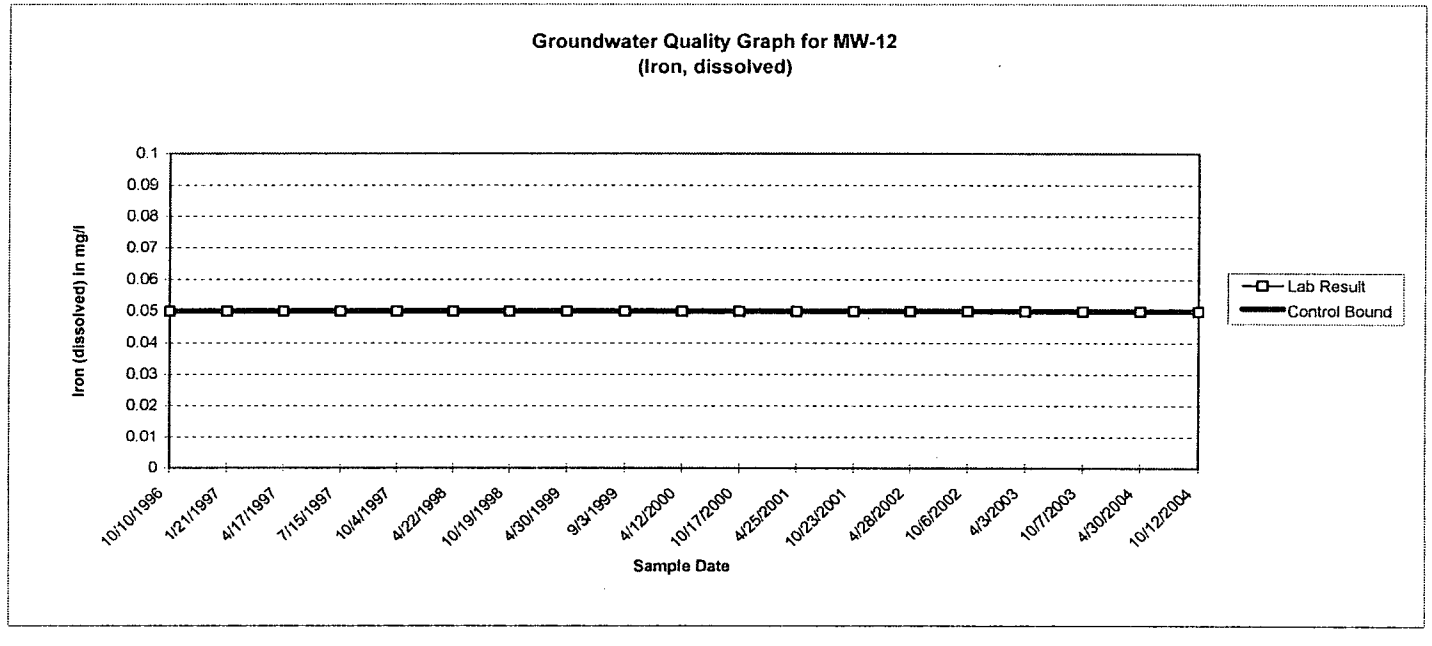

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GROUNDWATER SAMPLING AND ANALYSIS
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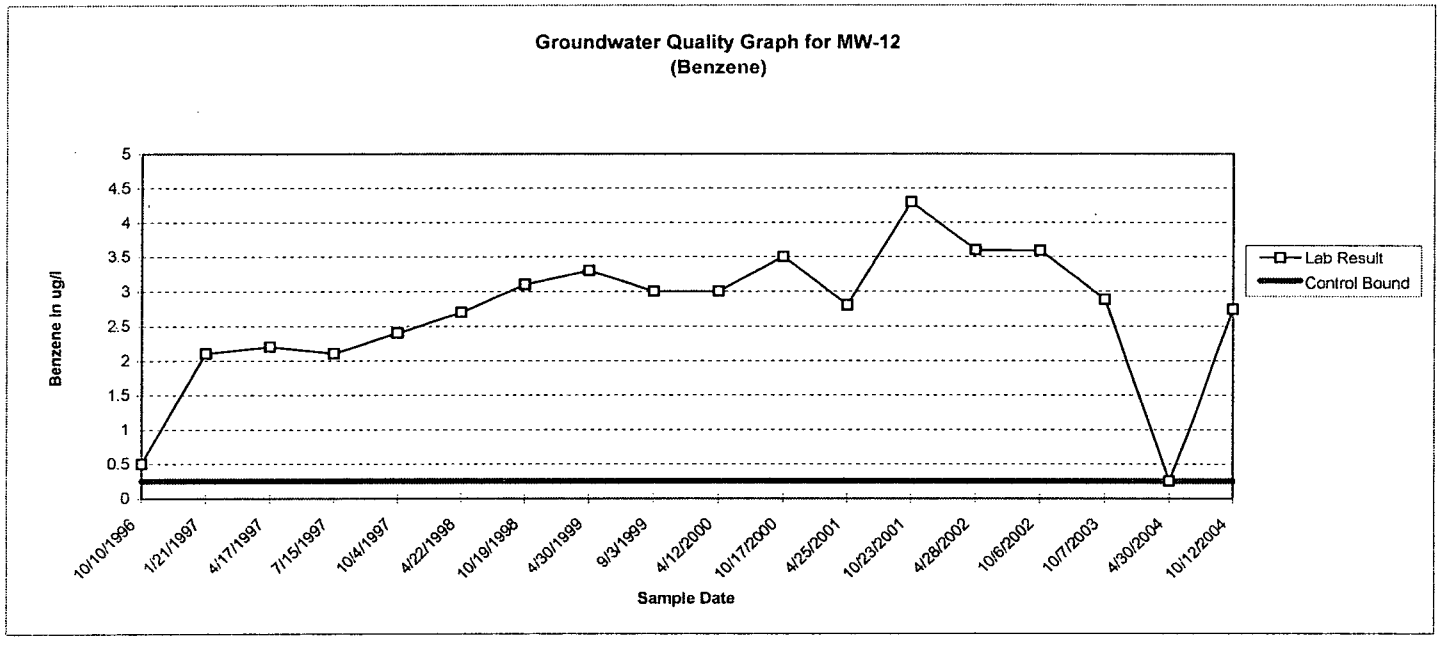

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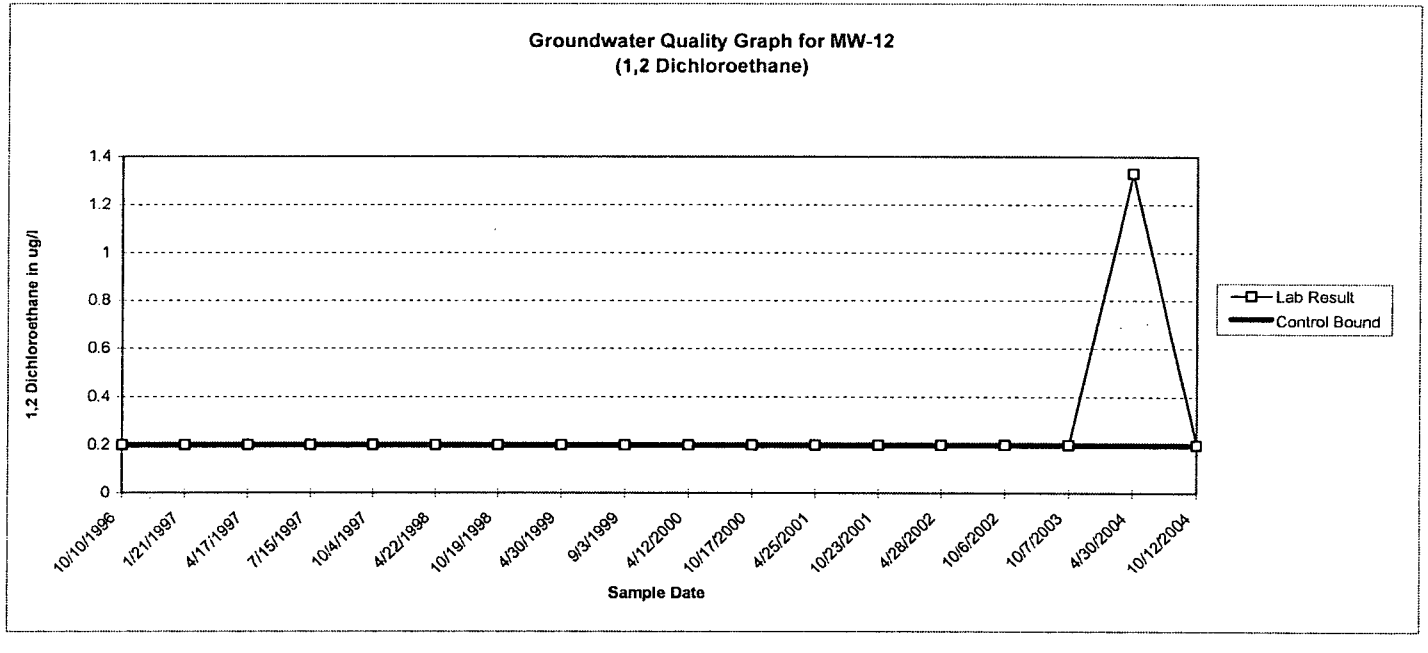
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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PLYMOUTH COUNTY LANDFILL
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TERRACON PROJECT NO. 40905033

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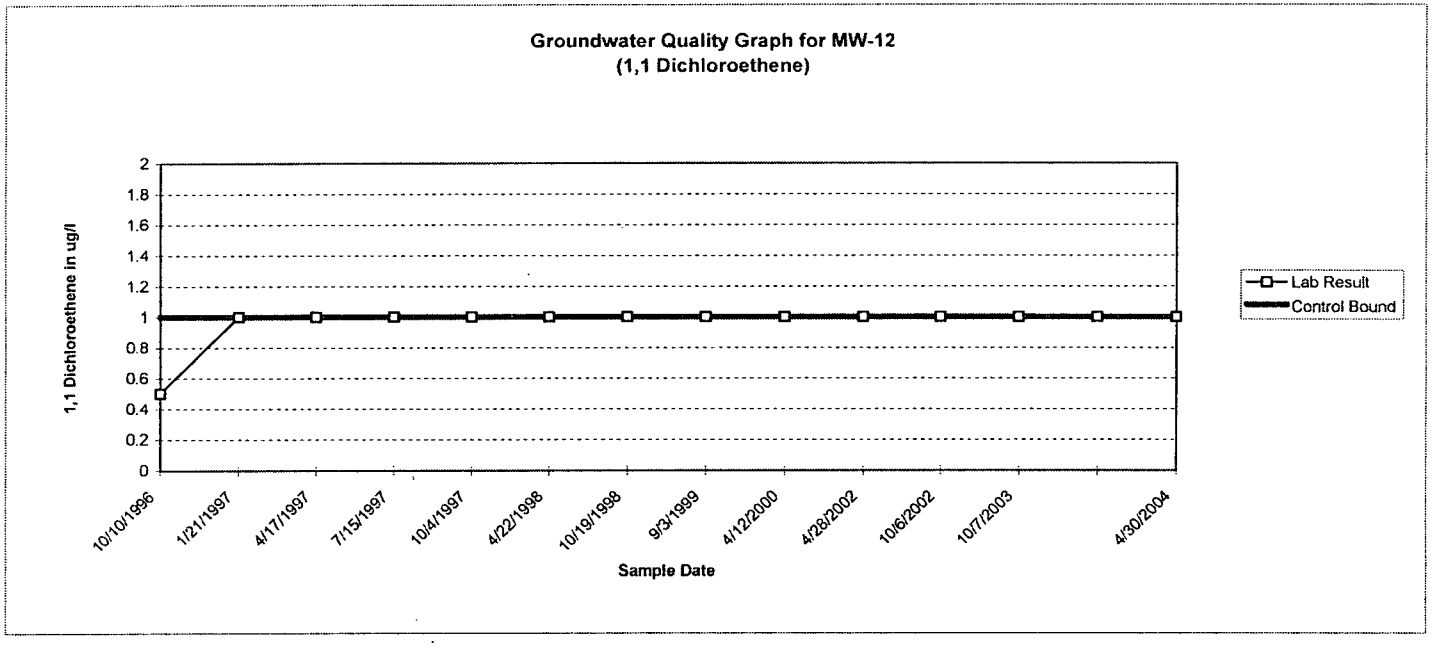

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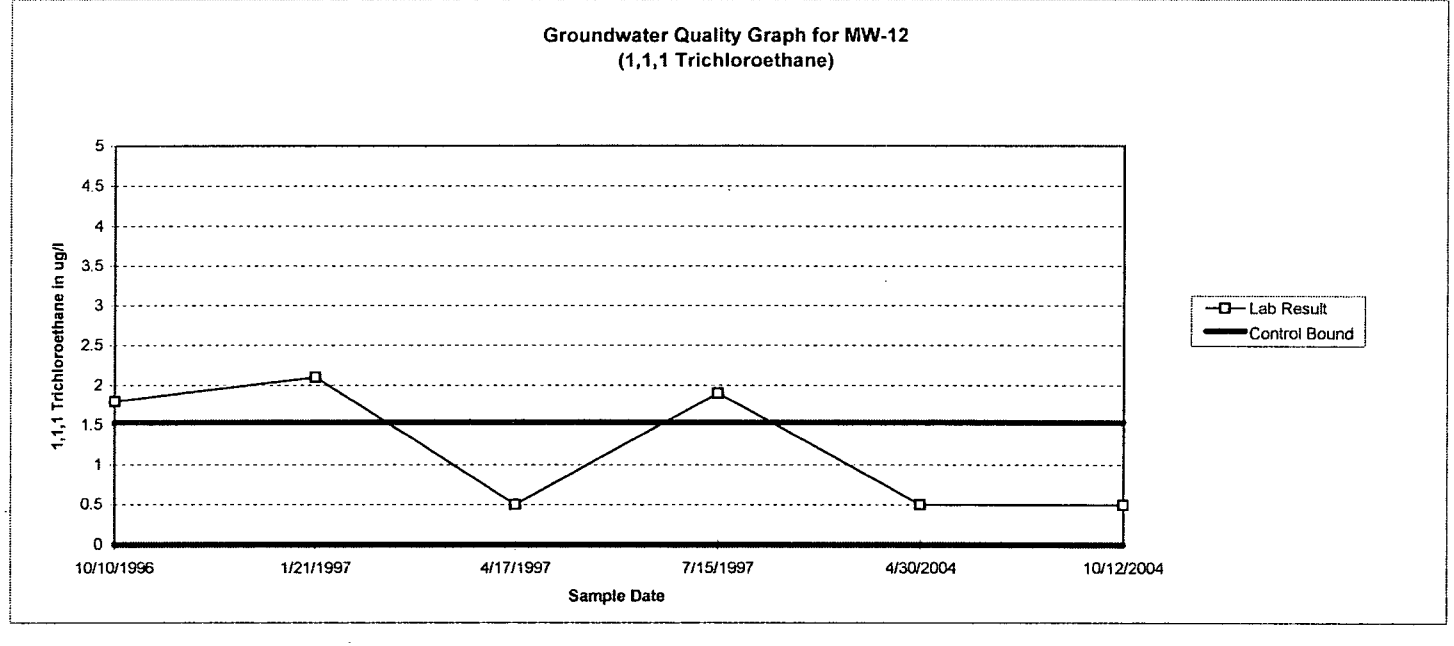

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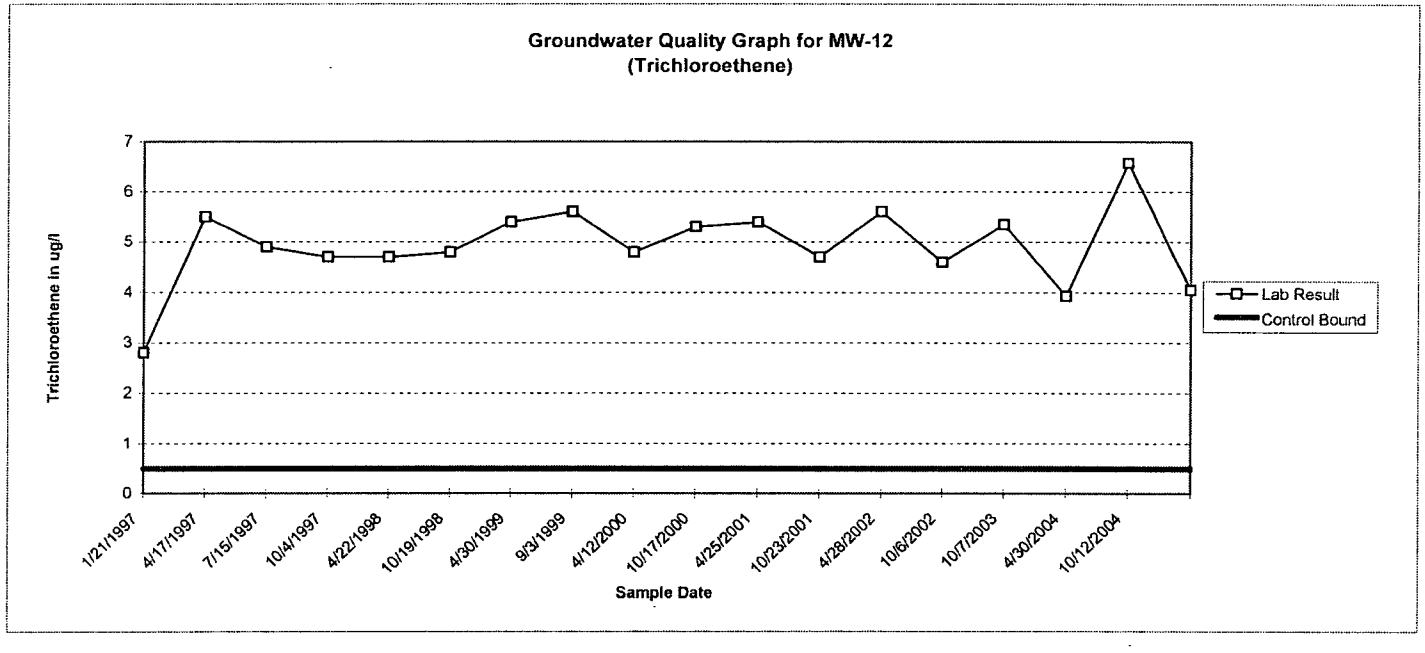
PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-12

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GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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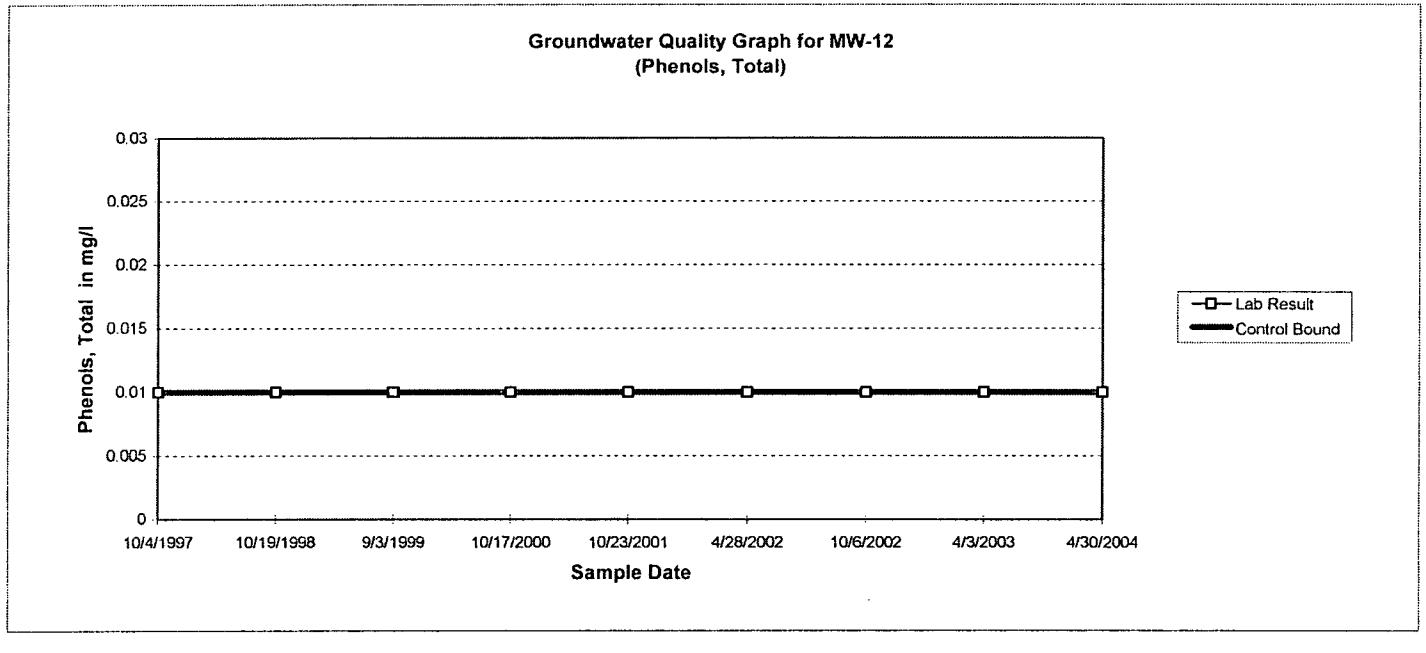

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GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

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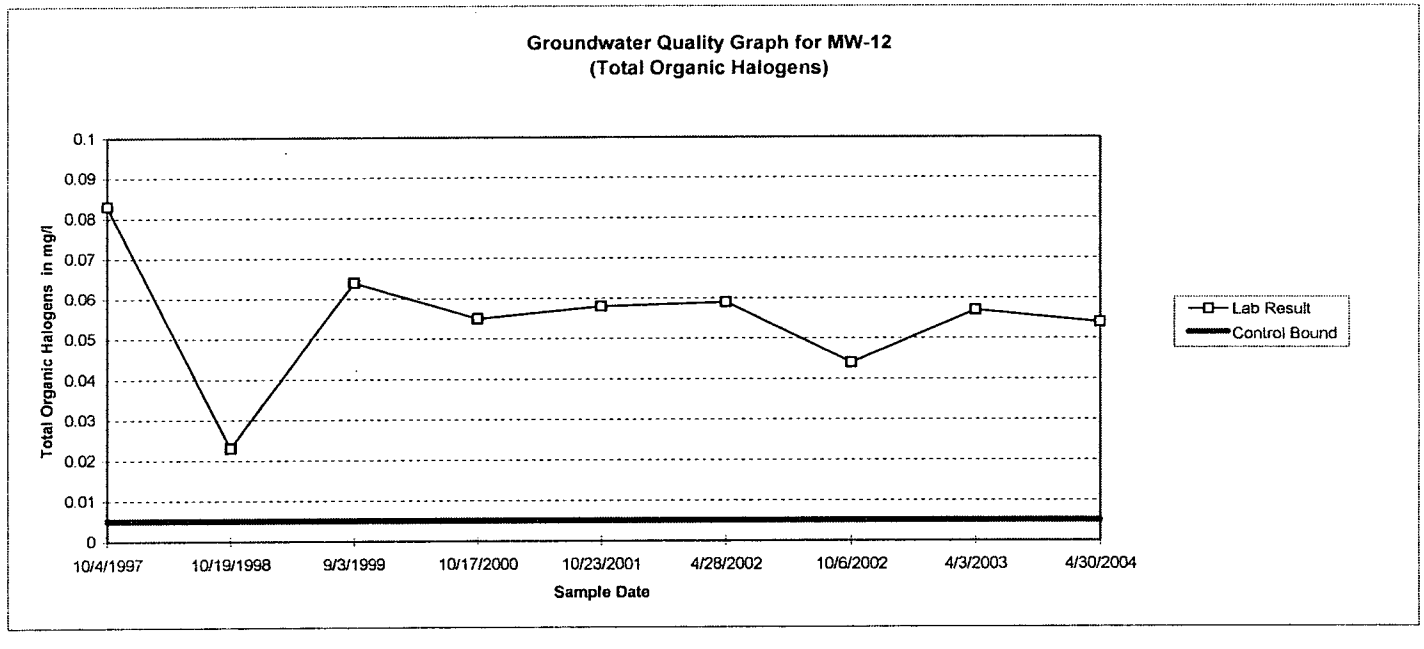

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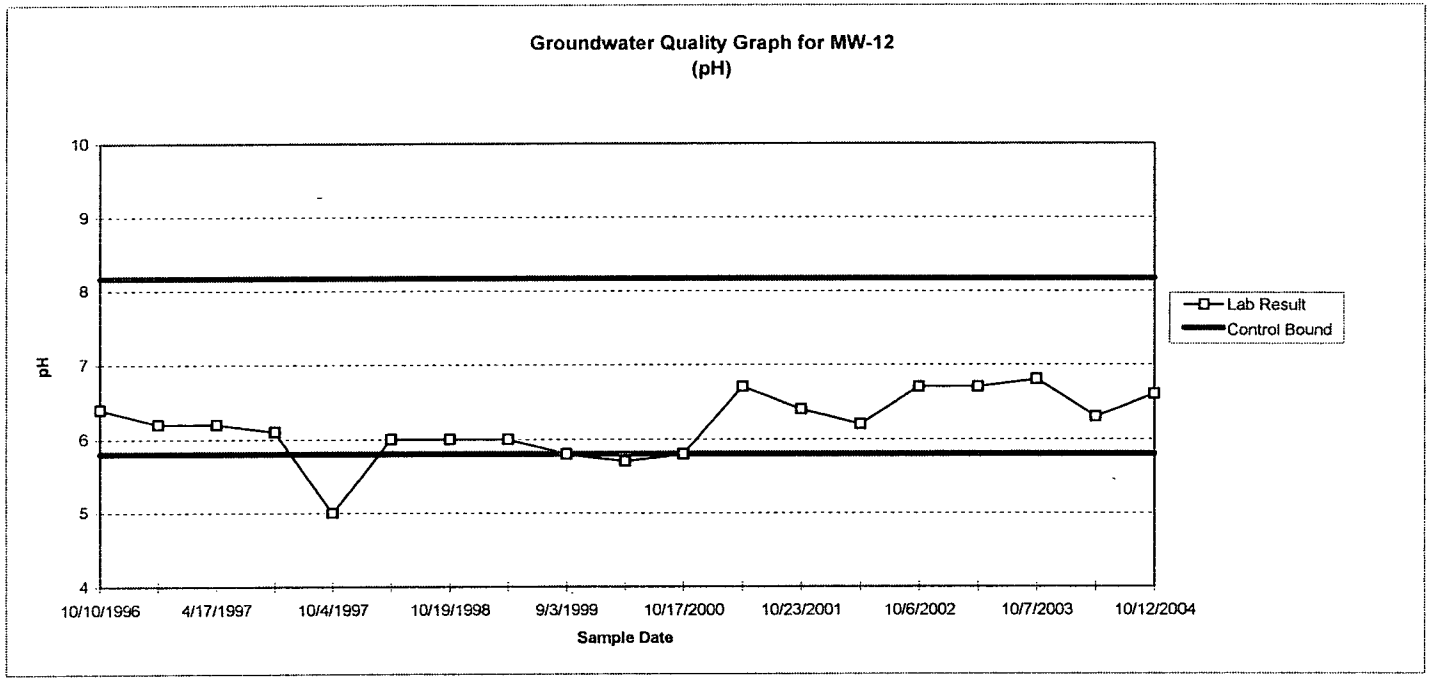

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TERRACON PROJECT NO. 40905033

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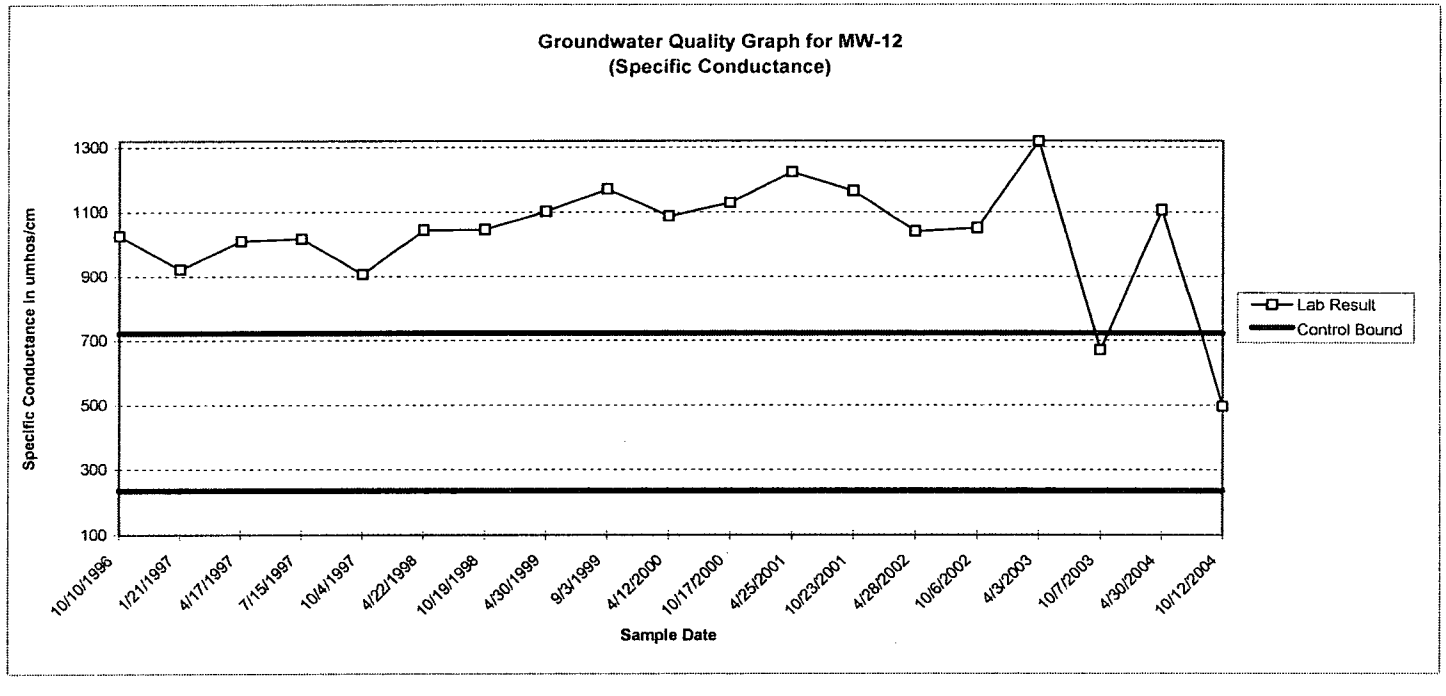

NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-11

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-11* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-11 Standard Deviation	MW-11 Mean	7/12/1996	10/10/1996	1/21/1997	4/17/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/3/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	10.046	21.27	19	19	22	20	28	20.2	32	37	33	6.4	5.5
Chemical Oxygen Demand (mg/l)	7.945	0.000	4.780	4.32	5.7	5.2	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.039	0.11	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.814	0.24	3.6	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.116	0.31	**0.5**	**0.5**	**0.25**	**0.25**	-	-	-	-	-	-	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.106	0.24	**0.5**	**0.2**	**0.2**	**0.2**	-	-	-	-	-	-	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.274	0.80	**0.5**	**0.5**	**1.0**	**1.0**	-	-	-	-	-	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.300	0.65	**0.5**	1.1	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.000	0.50	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.000	0.01	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.004	0.01	-	-	-	-	**0.005**	-	0.015	-	0.011	-	**0.005**
Field Parameters															
pH	8.2	5.8	0.3	6.9	6.6	6.8	6.8	6.6	6.8	6.7	6.7	6.5	6.5	7.1	6.9
Specific Conductance (umhos/cm)	723	236	180	683	465	622	515	537	543	625	667	707	736	737	740

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-11

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-11* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-11 Standard Deviation	MW-11 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	10.046	21.27	12.9	16.0	18.0	18.8	12.3	15.8	23.4	44.9
Chemical Oxygen Demand (mg/l)	7.945	0.000	5.271	4.453	**2.5**	**2.5**	5.4	23	7.8	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.039	0.11	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.27
Iron, dissolved (mg/l)	0.050	0.050	0.814	0.24	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.116	0.31	**0.25**	**0.25**	-	-	-	**0.25**	-	-
1,2-Dichloroethane (µg/l)	0.200	0.200	0.106	0.24	**0.2**	**0.2**	-	-	-	**0.2**	-	-
1,1-Dichloroethene (µg/l)	1.000	1.000	0.274	0.80	-	-	-	-	-	**1.0**	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.300	0.65	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.000	0.50	**0.5**	**0.5**	-	-	-	**0.5**	-	-
Phenols, Total (mg/l)	0.010	0.010	0.000	0.01	-	**0.01**	**0.01**	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.004	0.01	-	**0.005**	**0.005**	**0.005**	**0.005**	-	**0.005**	-
Field Parameters												
pH	8.2	5.8	0.3	6.9	7.1	7.2	6.3	7.3	7.2	7.5	6.8	7.1
Specific Conductance (umhos/cm)	723	236	180	683	428	733	784	684	735	832	615	1266

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
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ANALYSIS SHEET MW-11

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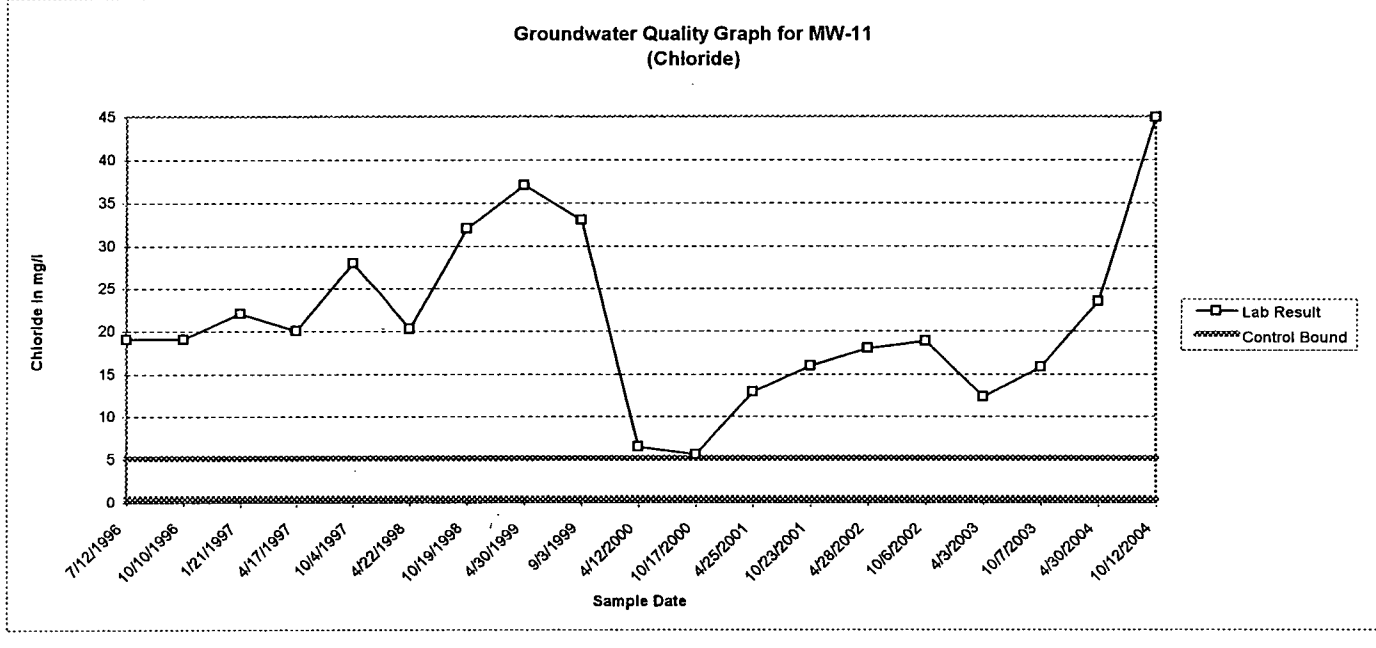
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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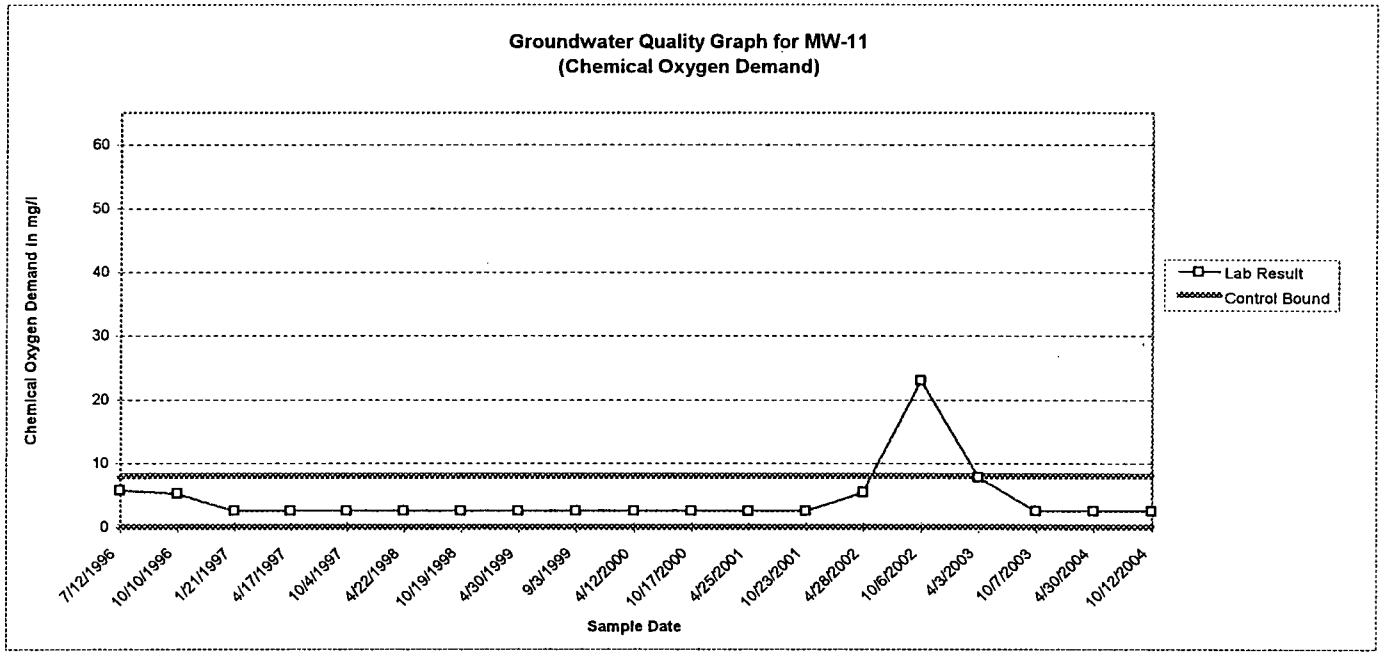

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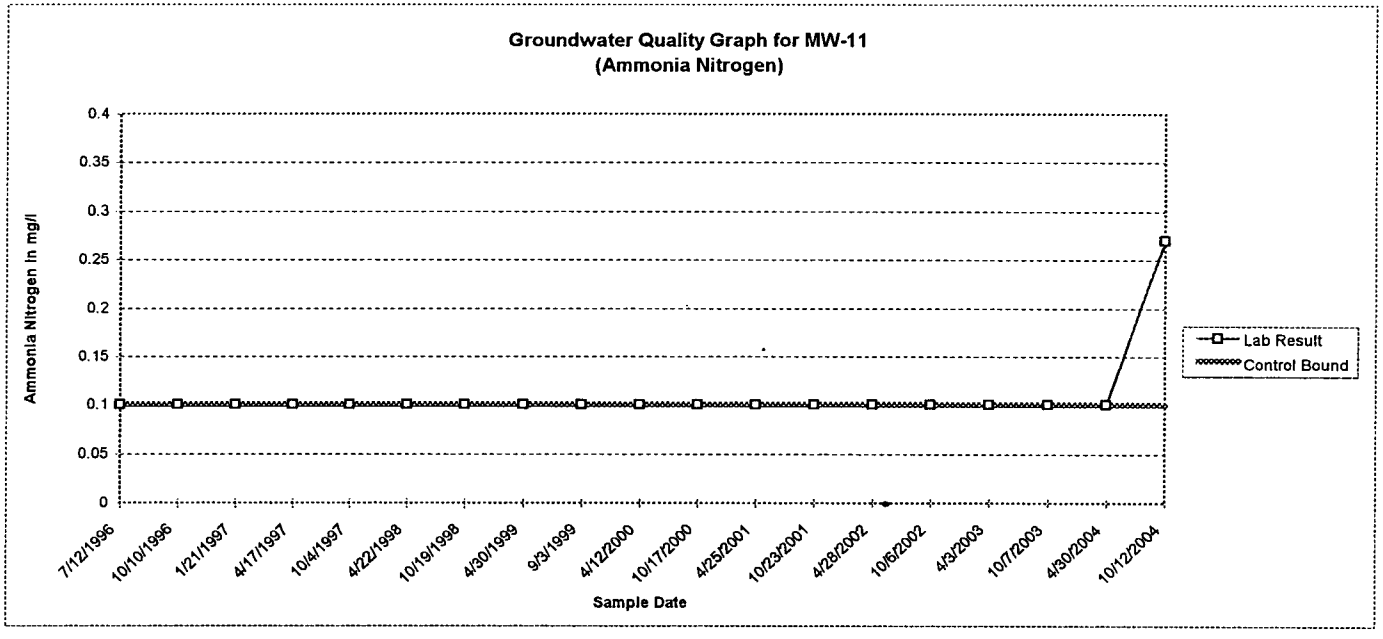

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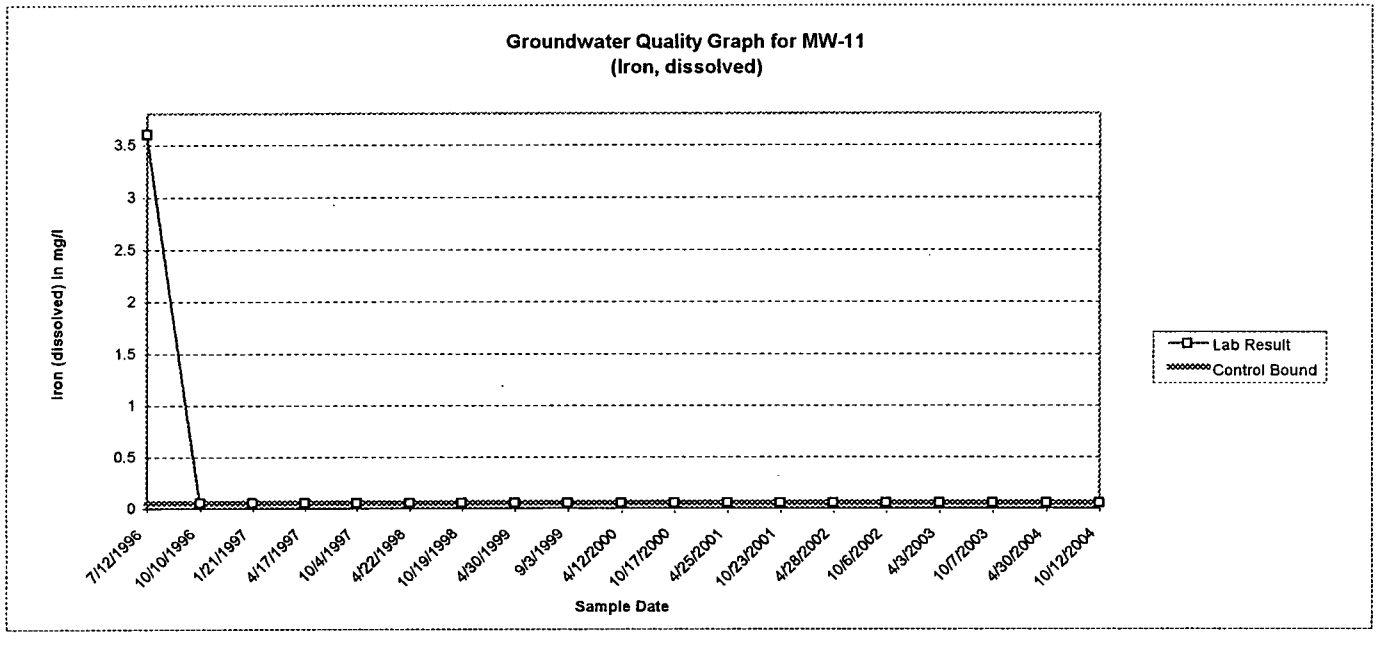

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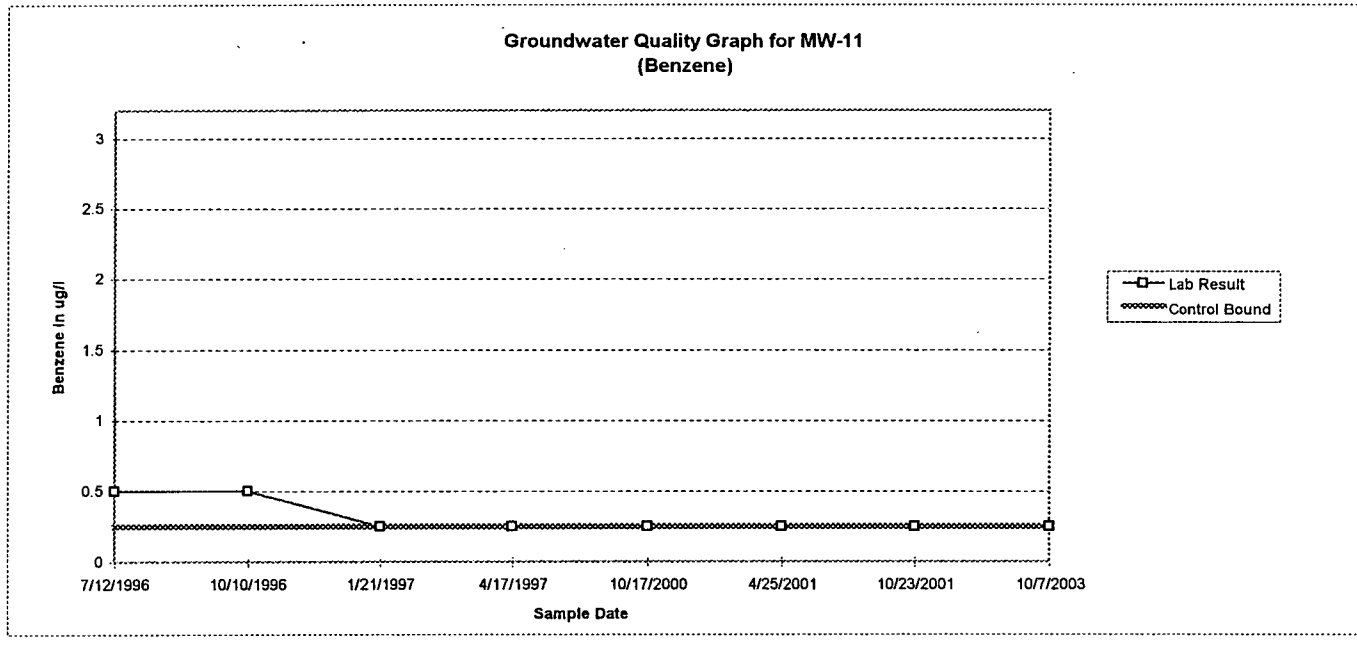
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-11

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

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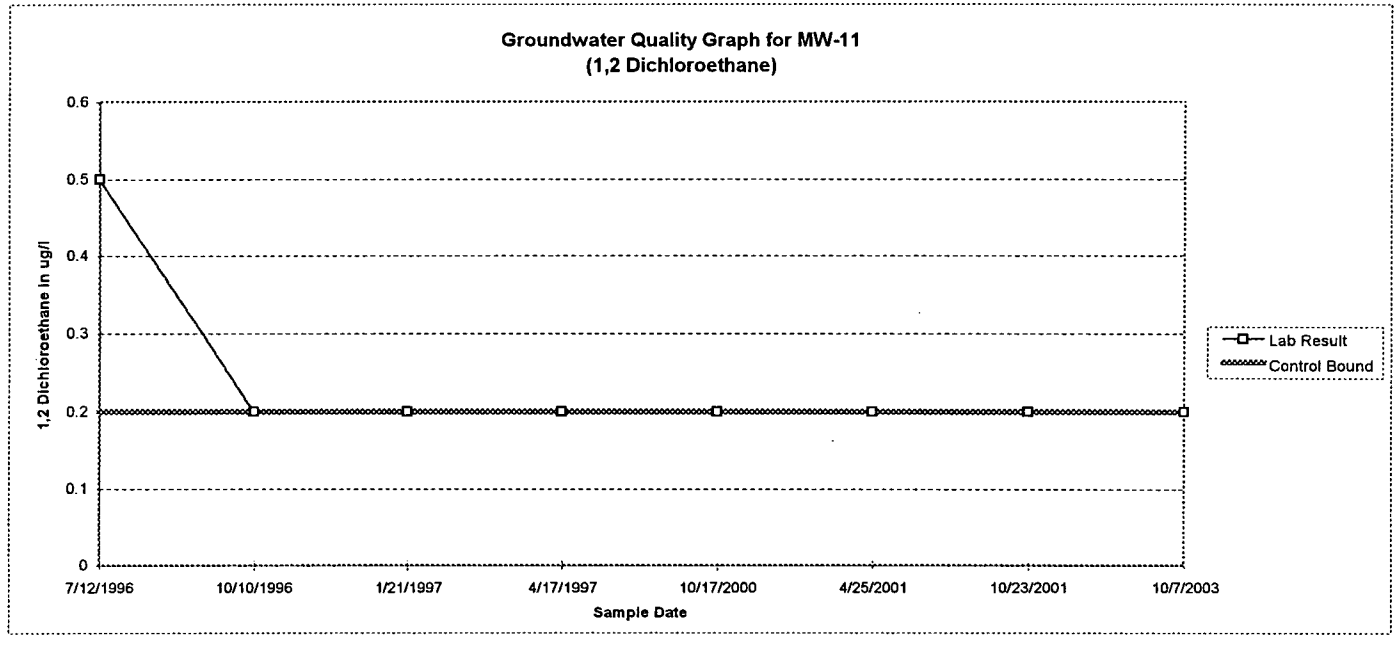

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PROJECT NO. TERRACON 40905033

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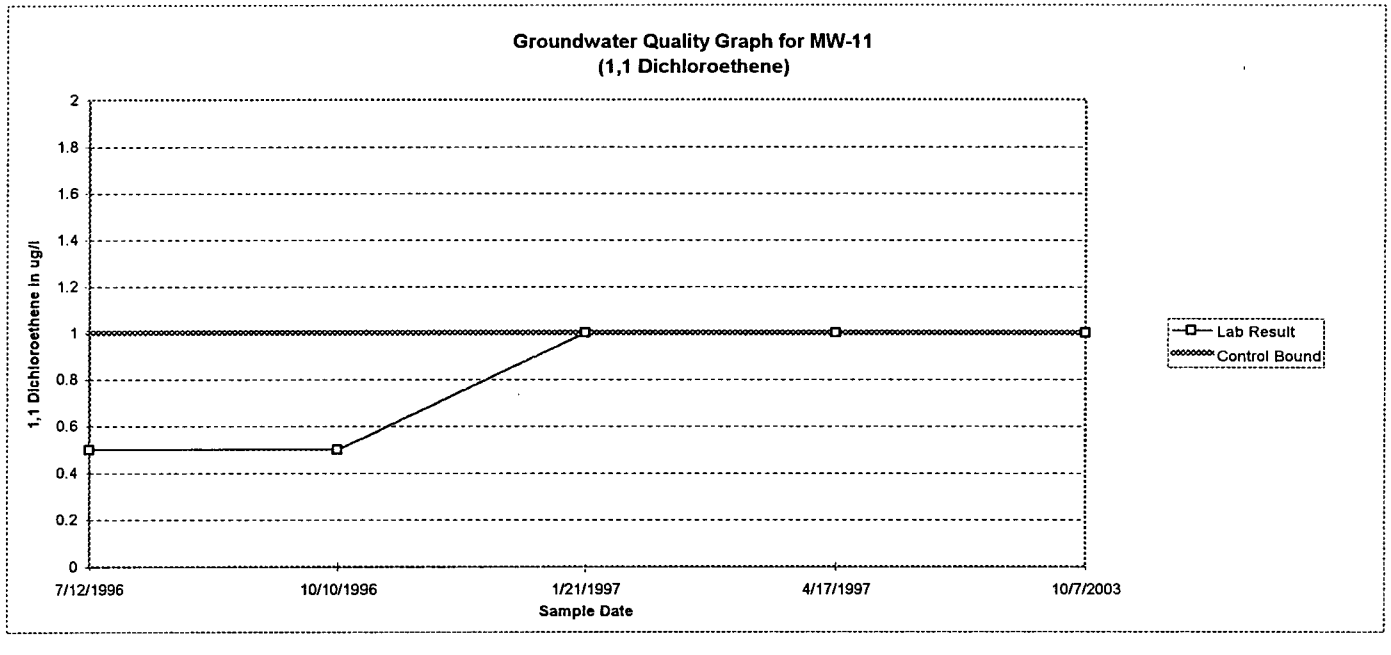

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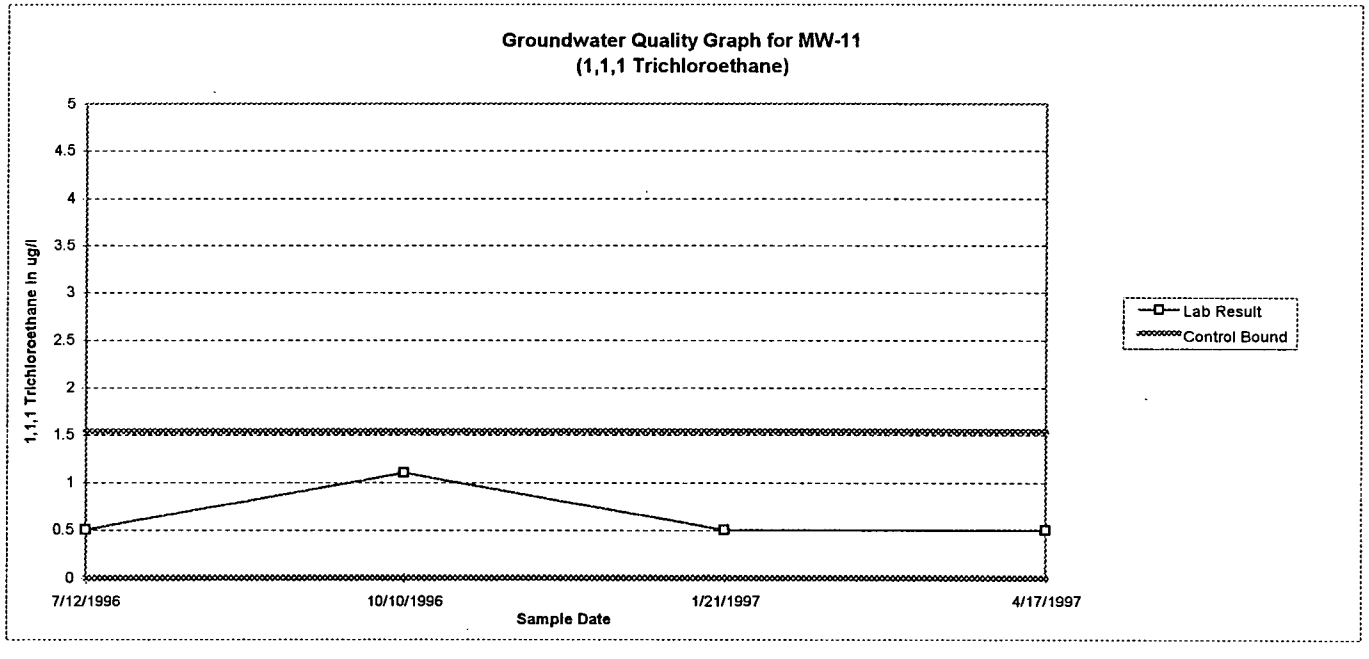

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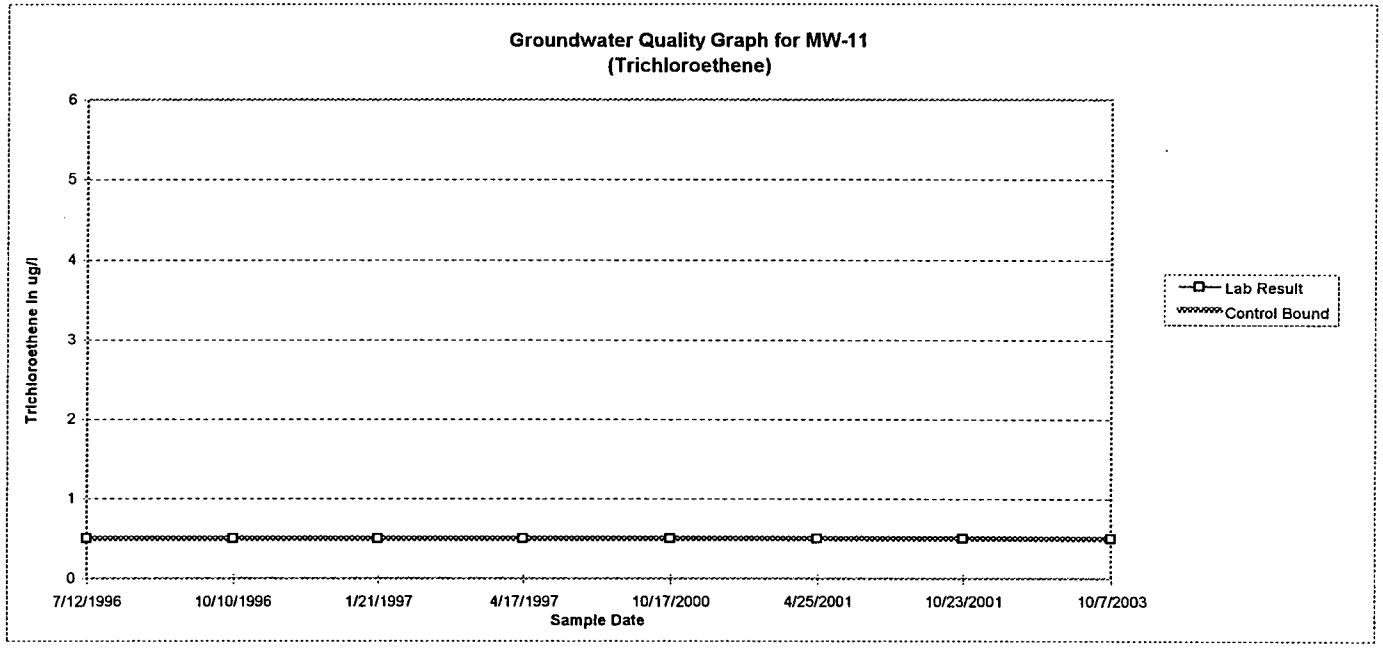

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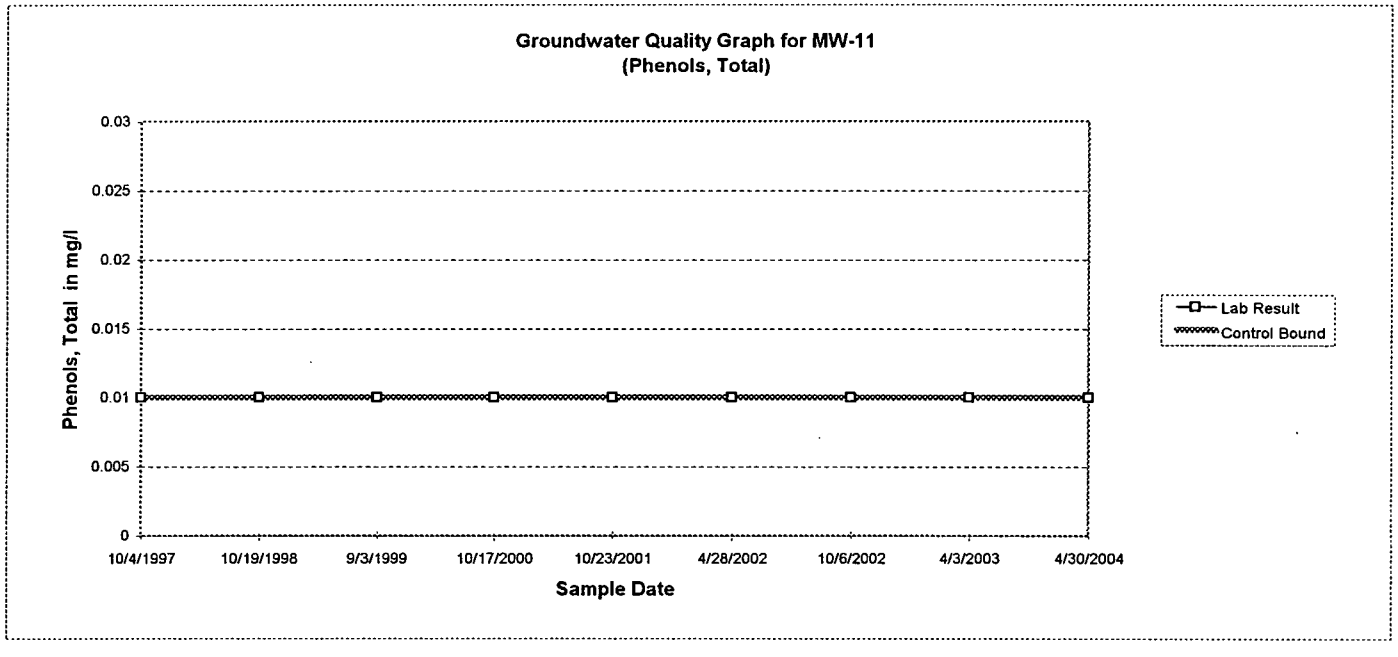

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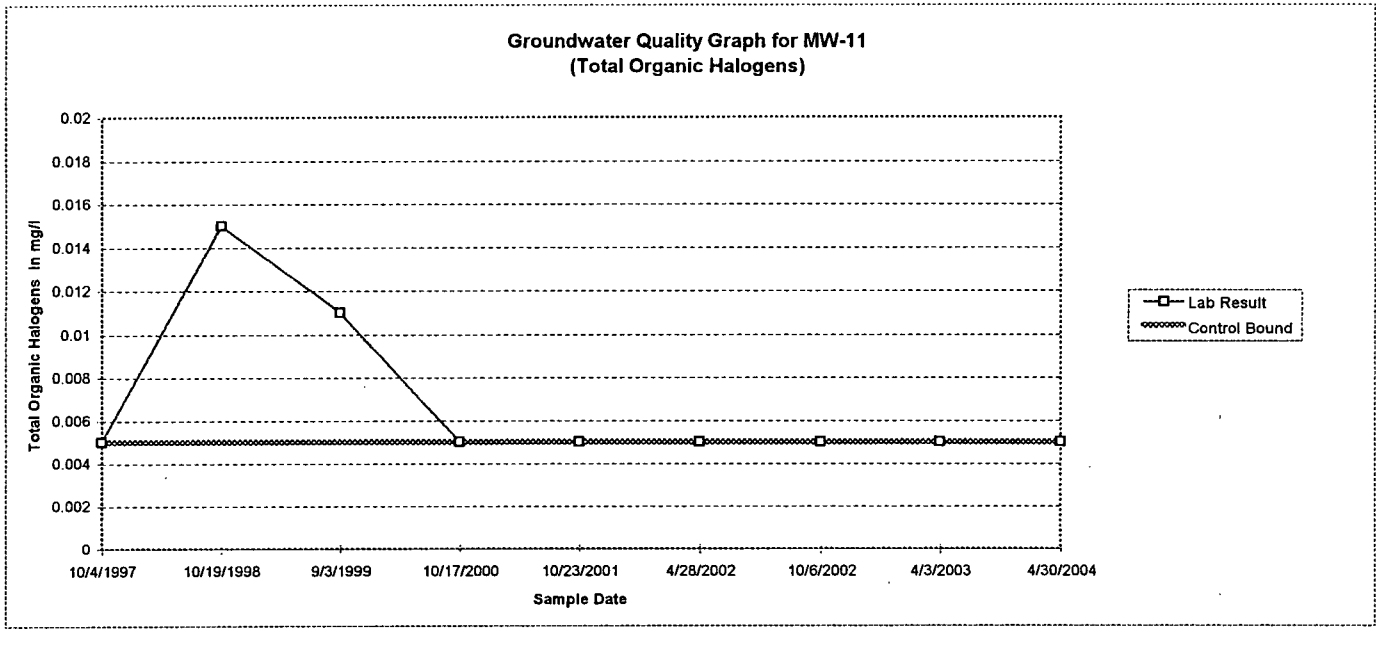

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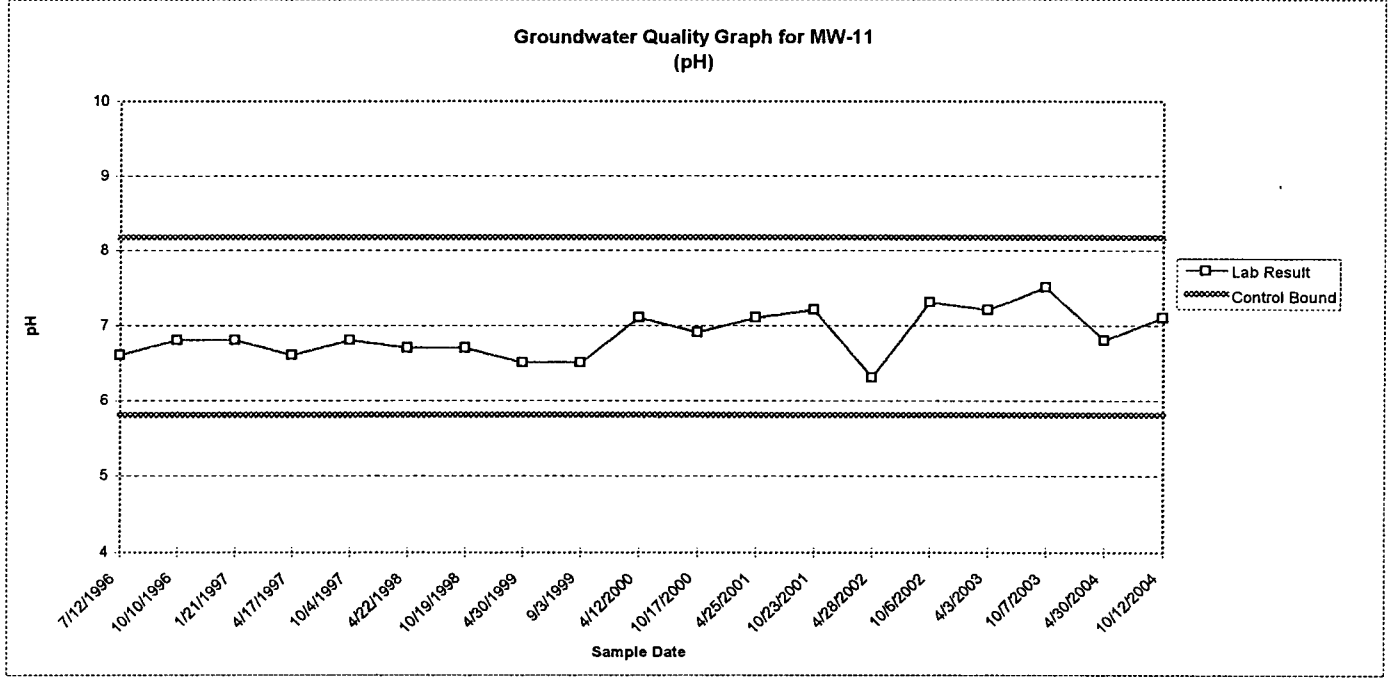

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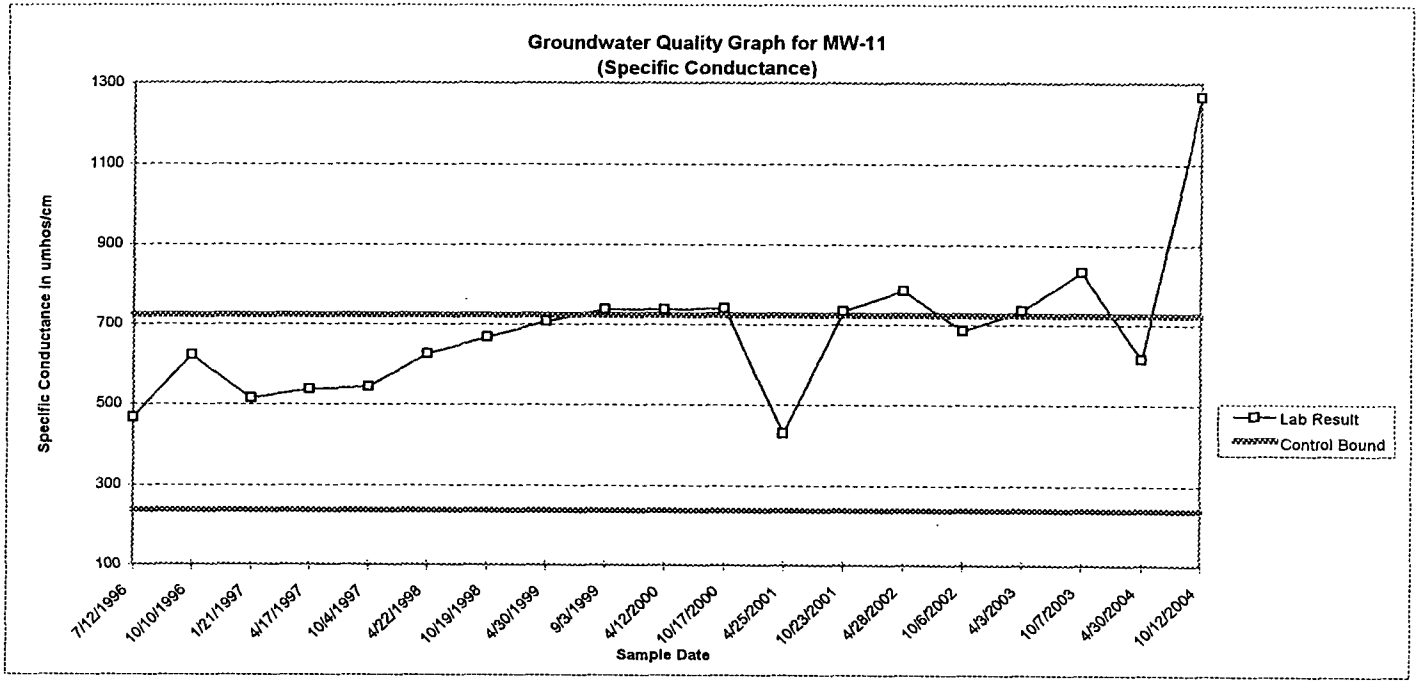

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ANALYSIS SHEET MW-10

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-10* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-10 Standard Deviation	MW-10 Mean	8/9/1996	10/10/1996	1/21/1997	4/17/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	3.441	19.51	13	14	15	22	19	19.6	20	21	21	18.6	19.7
Chemical Oxygen Demand (mg/l)	7.945	0.000	33.592	13.49	140.0	**2.5**	5.7	**2.5**	**2.5**	**2.5**	**2.5**	63	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.229	0.15	1.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.023	0.06	**0.05**	**0.05**	**0.05**	0.15	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.116	0.31	**0.5**	**0.5**	**0.25**	**0.25**	-	-	-	-	-	-	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.106	0.24	**0.5**	**0.2**	**0.2**	**0.2**	-	-	-	-	-	-	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.274	0.80	**0.5**	**0.5**	**1.0**	**1.0**	-	-	-	-	-	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.50	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.177	0.56	**0.5**	**0.5**	1.0	**0.5**	-	-	-	-	-	-	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.007	0.01	-	-	-	-	0.03	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.005	0.01	-	-	-	-	0.012	-	0.019	-	0.013	-	0.011
Field Parameters															
pH	8.2	5.8	0.4	6.8	8.1	6.7	6.8	6.5	6.5	6.4	6.5	6.4	6.3	6.3	6.4
Specific Conductance (umhos/cm)	723	236	89	672	787	695	625	724	644	684	742	713	774	700	729

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-10

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-10 (Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-10 Standard Deviation	MW-10 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	3.441	19.51	16.7	18.6	17.9	17.8	23	23.6	24	26.2
Chemical Oxygen Demand (mg/l)	7.945	0.000	33.592	13.49	**2.5**	**2.5**	5.7	6.9	**2.5**	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.229	0.15	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.023	0.06	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.116	0.31	**0.25**	**0.25**	-	-	-	**0.25**	-	-
1,2-Dichloroethane (µg/l)	0.200	0.200	0.106	0.24	**0.2**	**0.2**	-	-	-	**0.2**	-	-
1,1-Dichloroethene (µg/l)	1.000	1.000	0.274	0.80	-	-	-	-	-	**1.0**	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.50	-	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.177	0.56	**0.5**	**0.5**	-	-	-	**0.5**	-	-
Phenols, Total (mg/l)	0.010	0.010	0.007	0.01	-	**0.01**	0.01	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.005	0.01	-	**0.005**	0.005	0.012	**0.005**	-	**0.005**	-
Field Parameters												
pH	8.2	5.8	0.4	6.8	7.0	6.9	6.5	7.1	7.0	7.3	6.6	7.0
Specific Conductance (umhos/cm)	723	236	89	672	570	740	463	645	753	550	693	532

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
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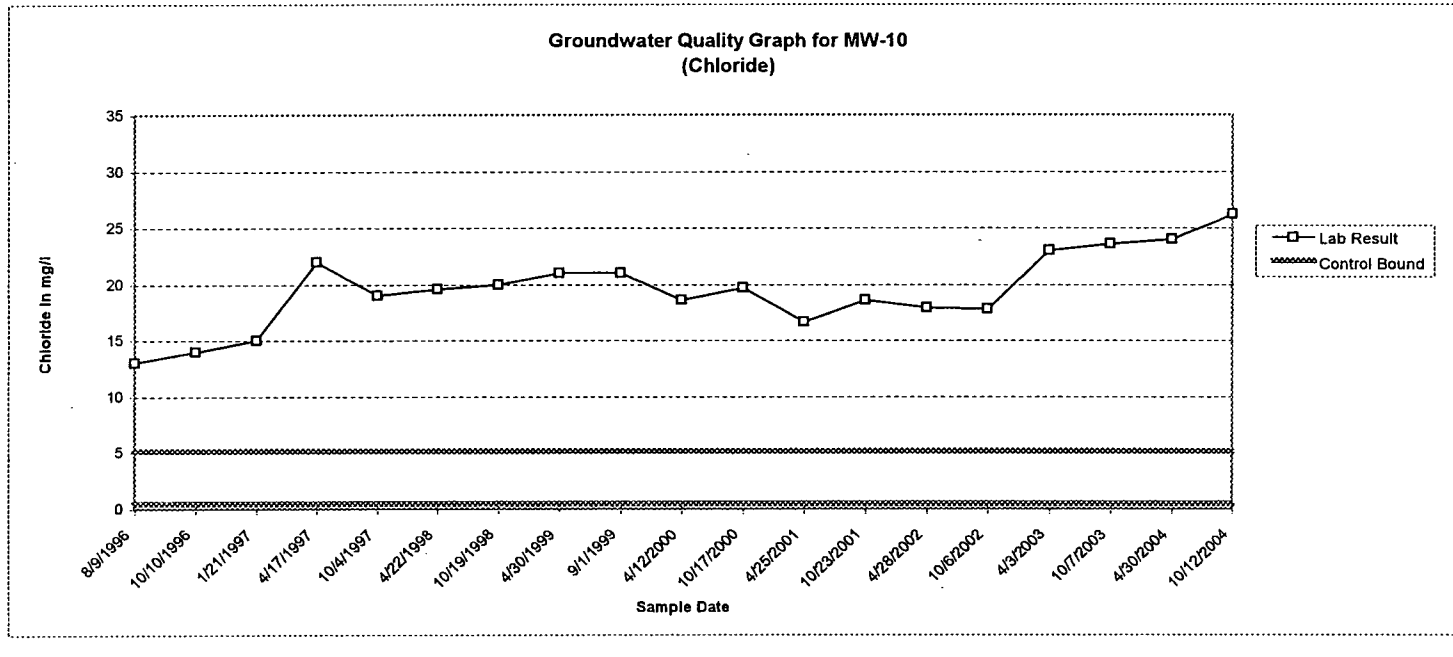

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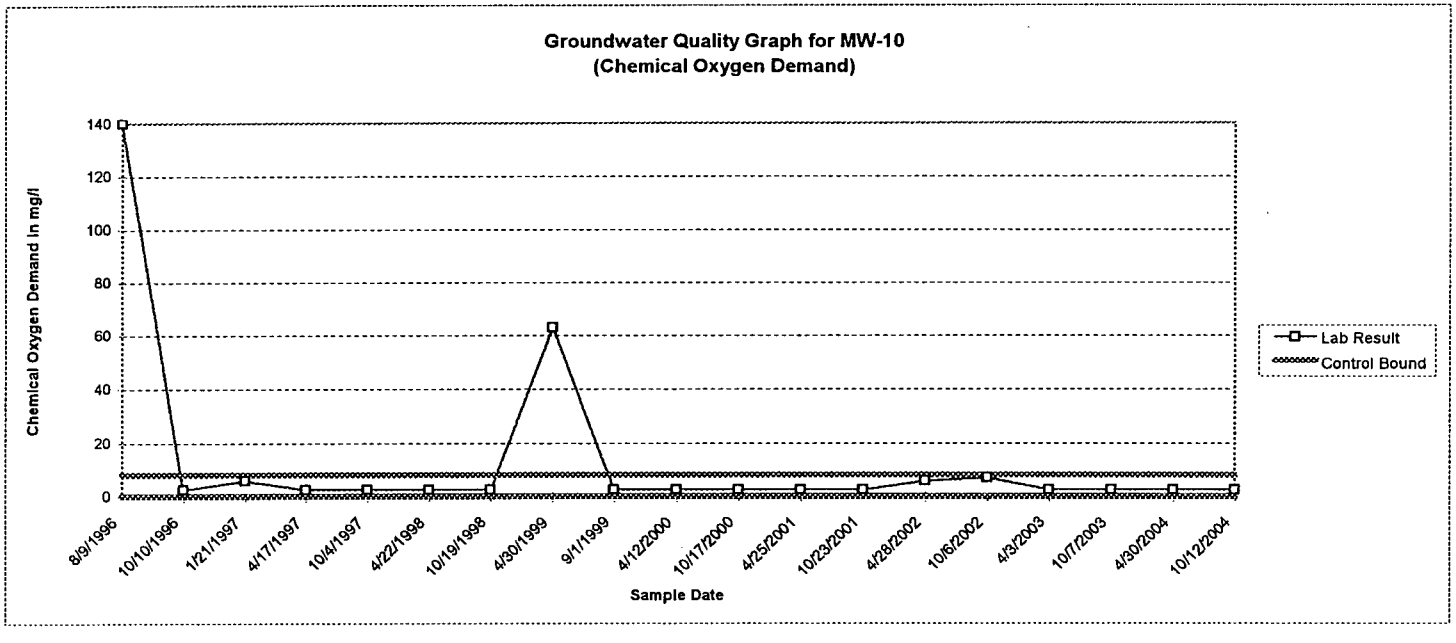

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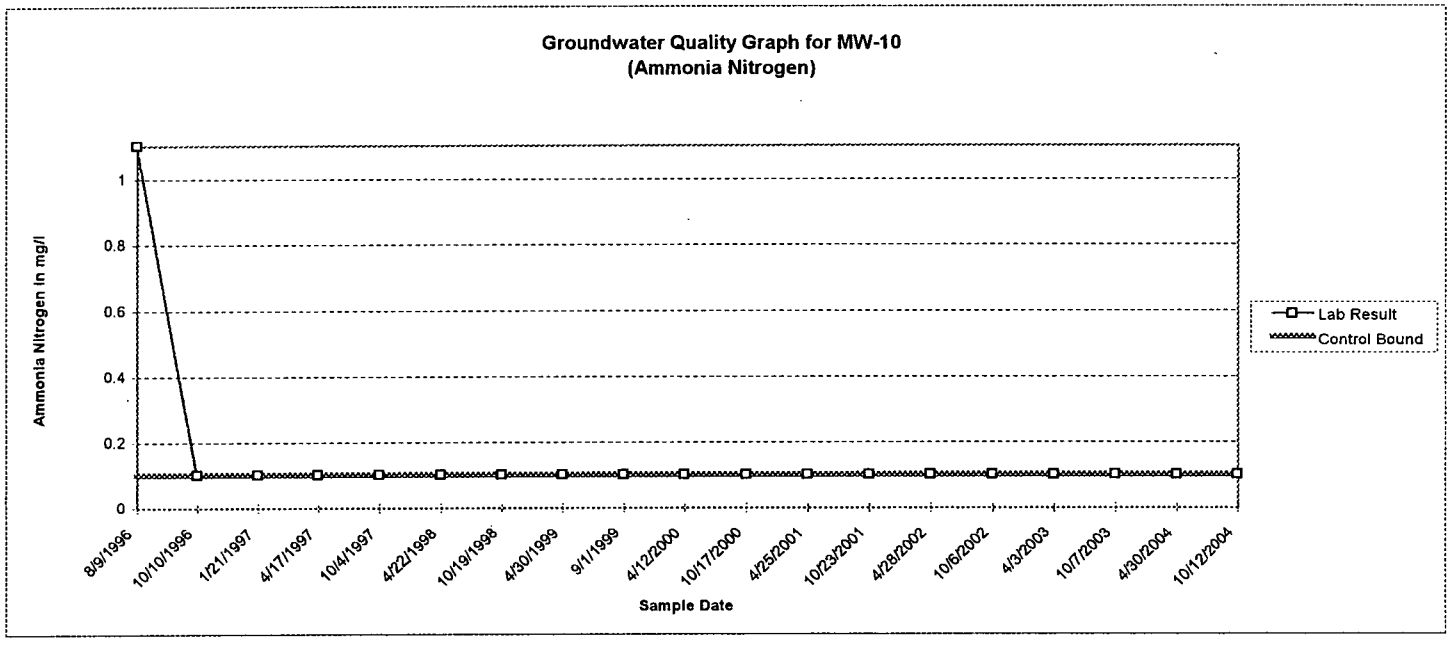

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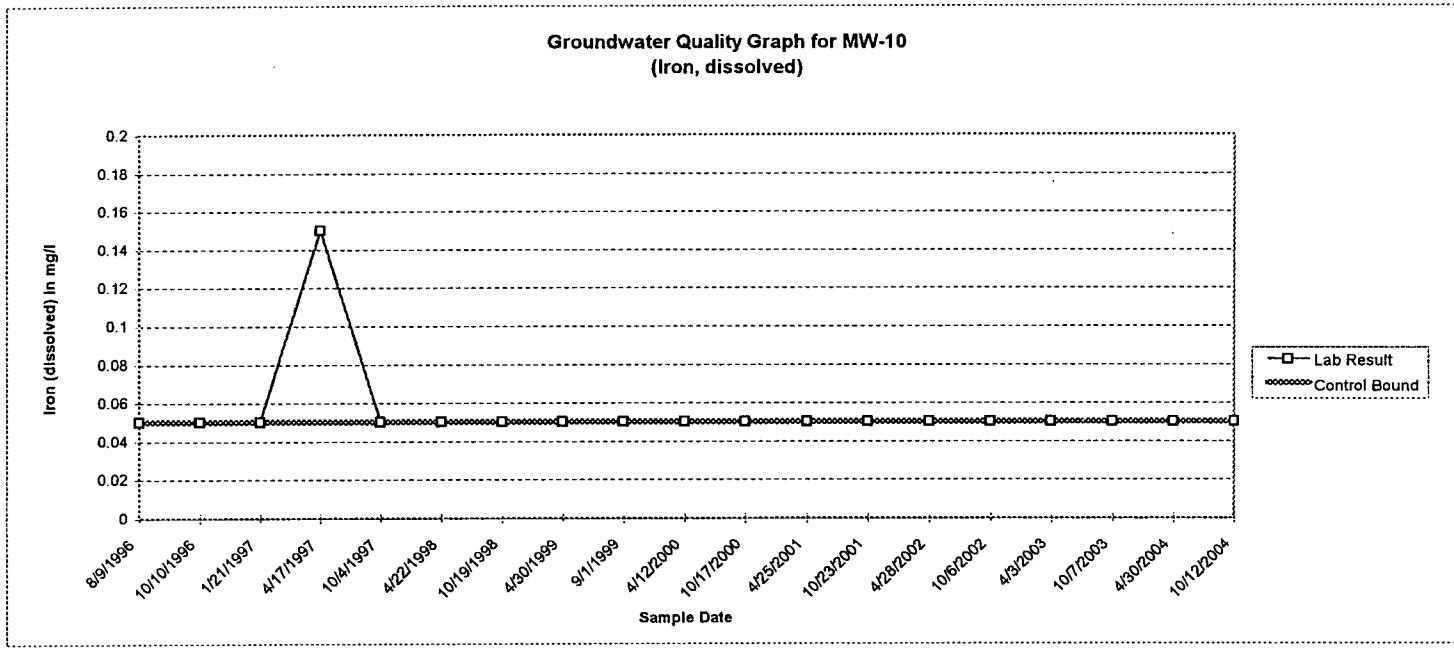

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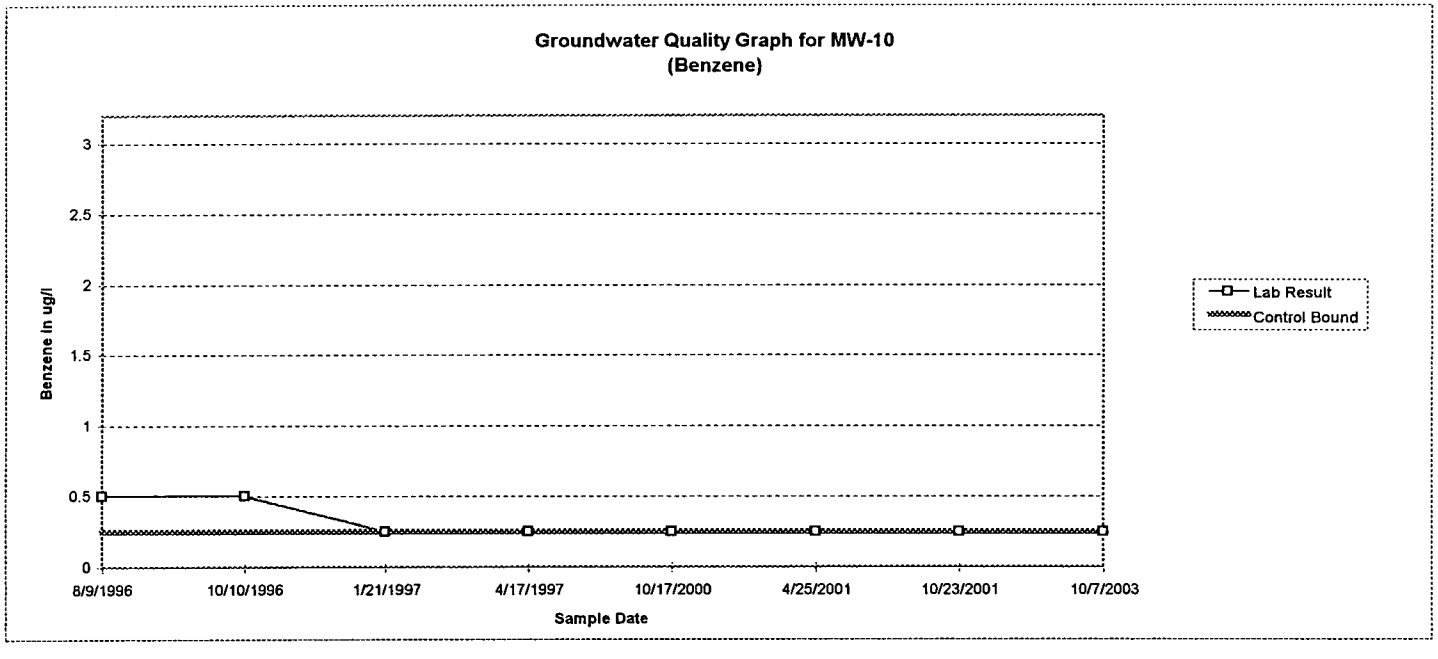

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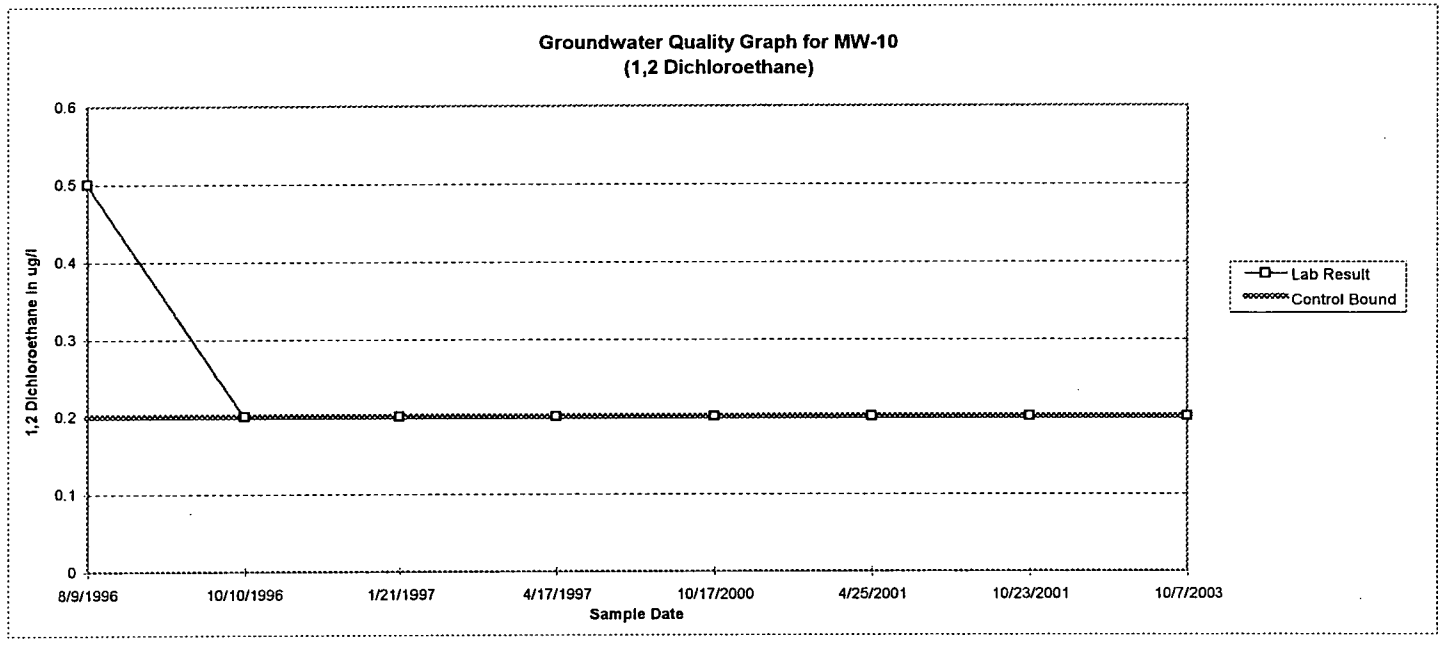

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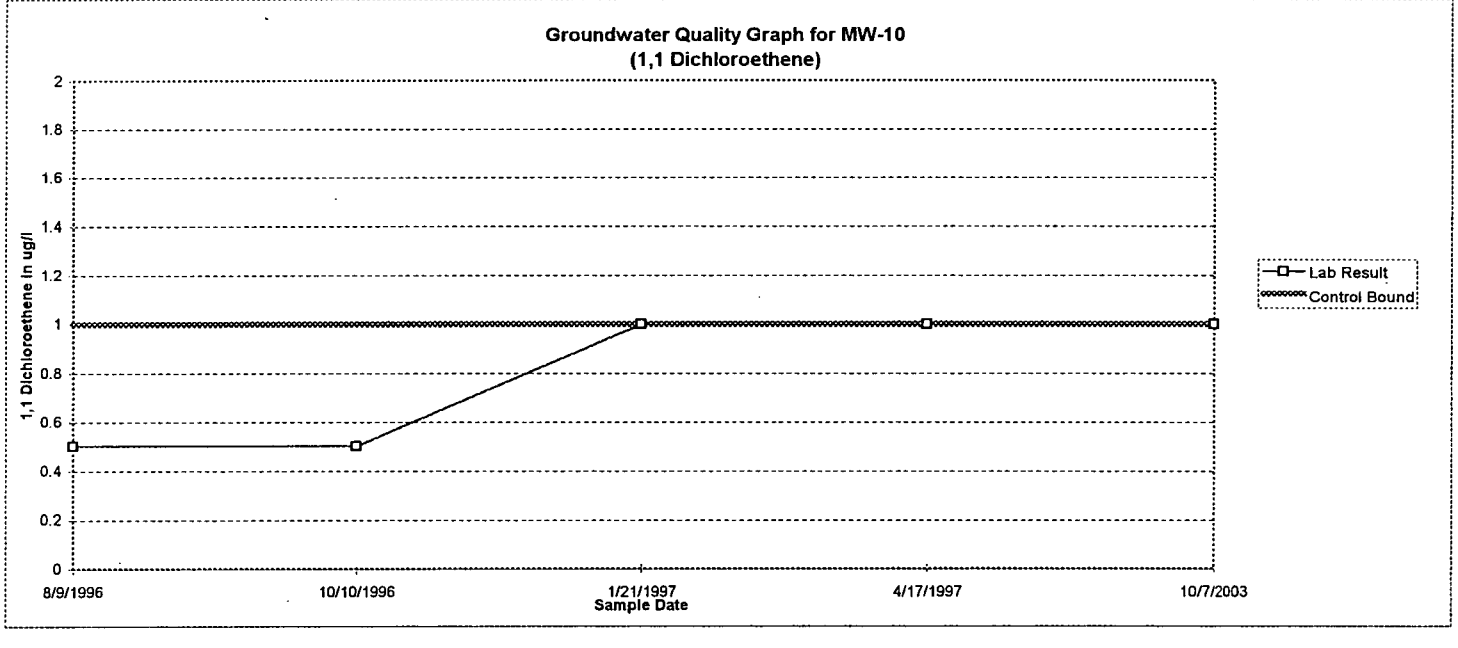

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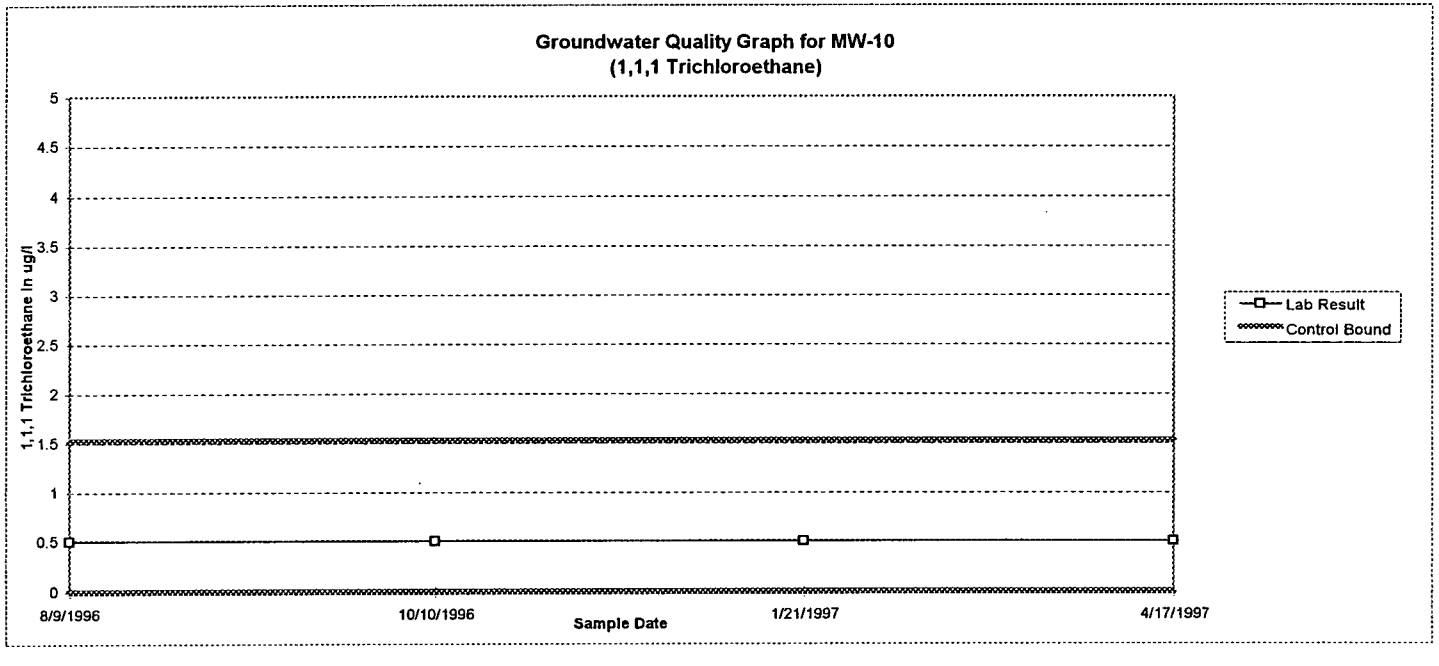

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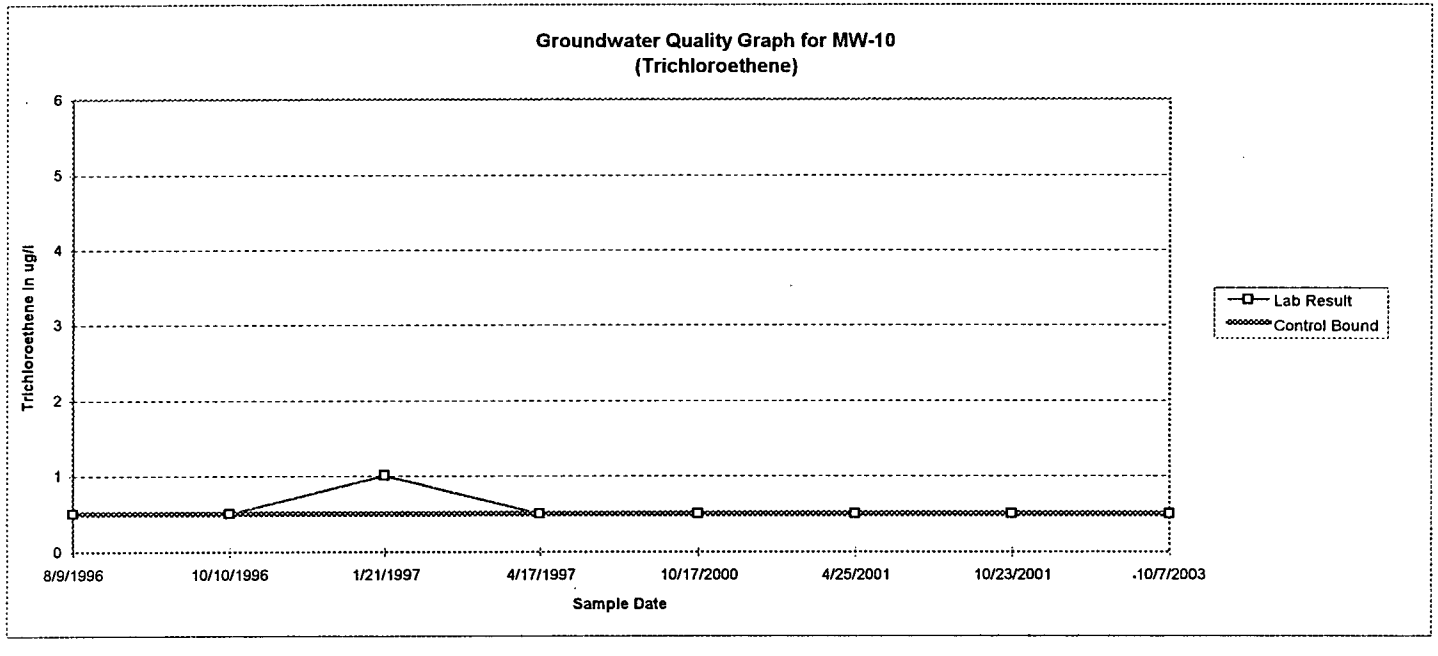

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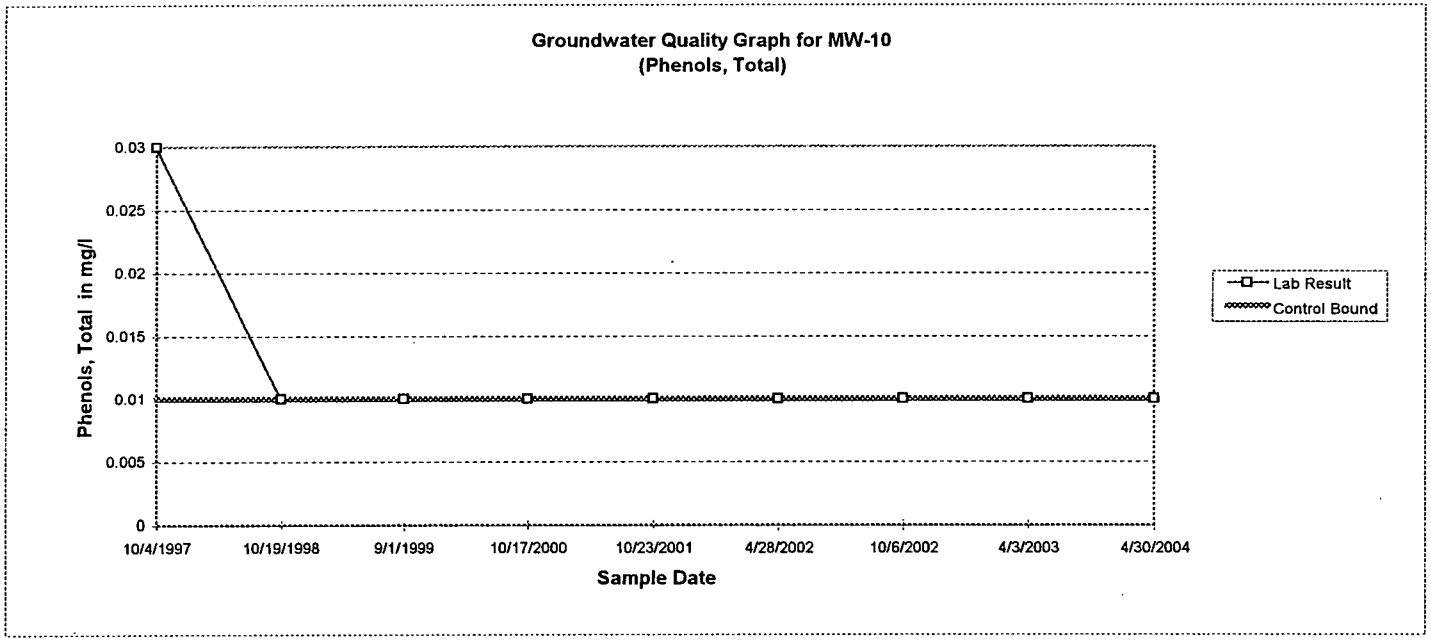

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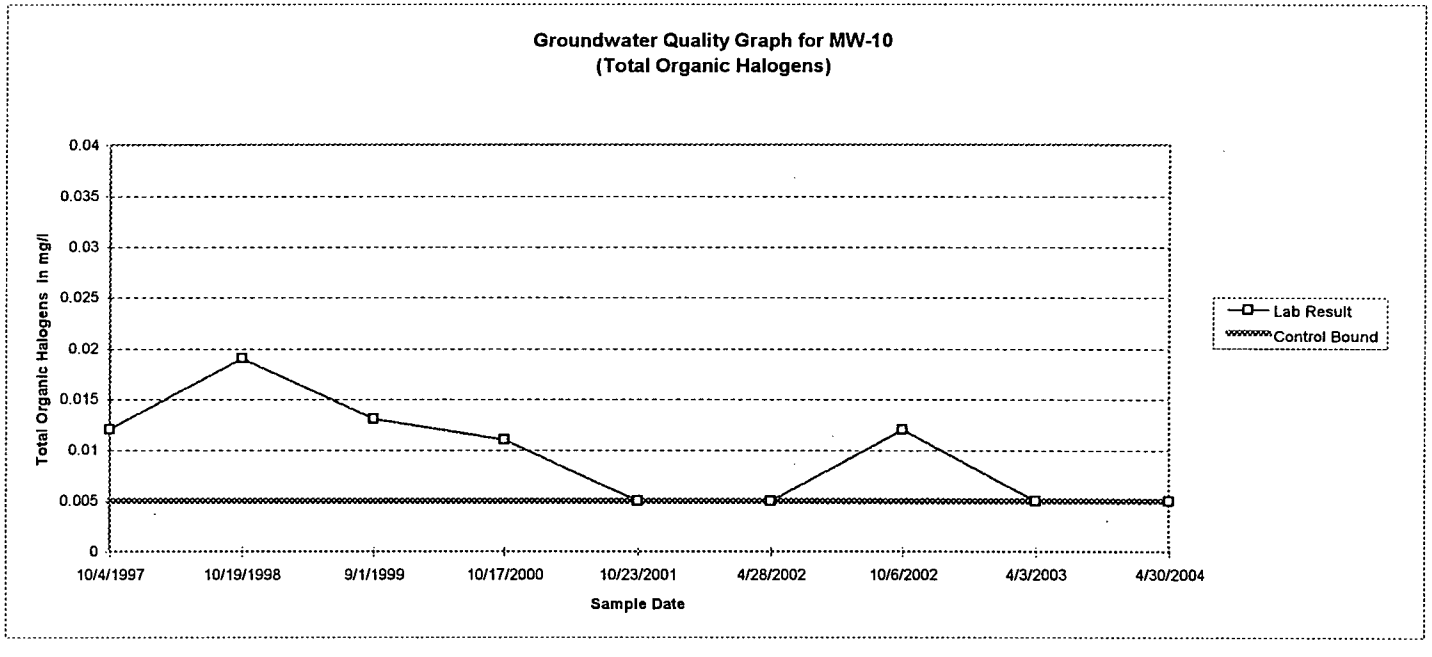

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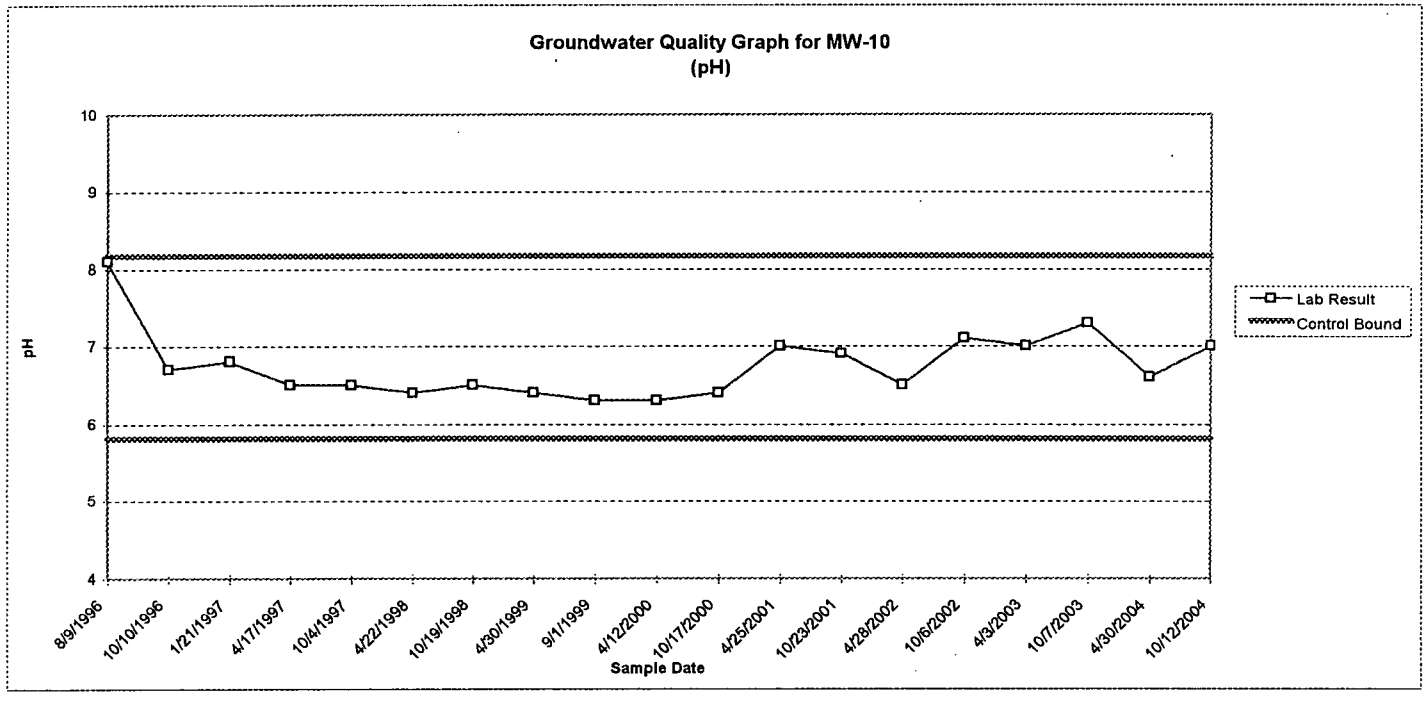


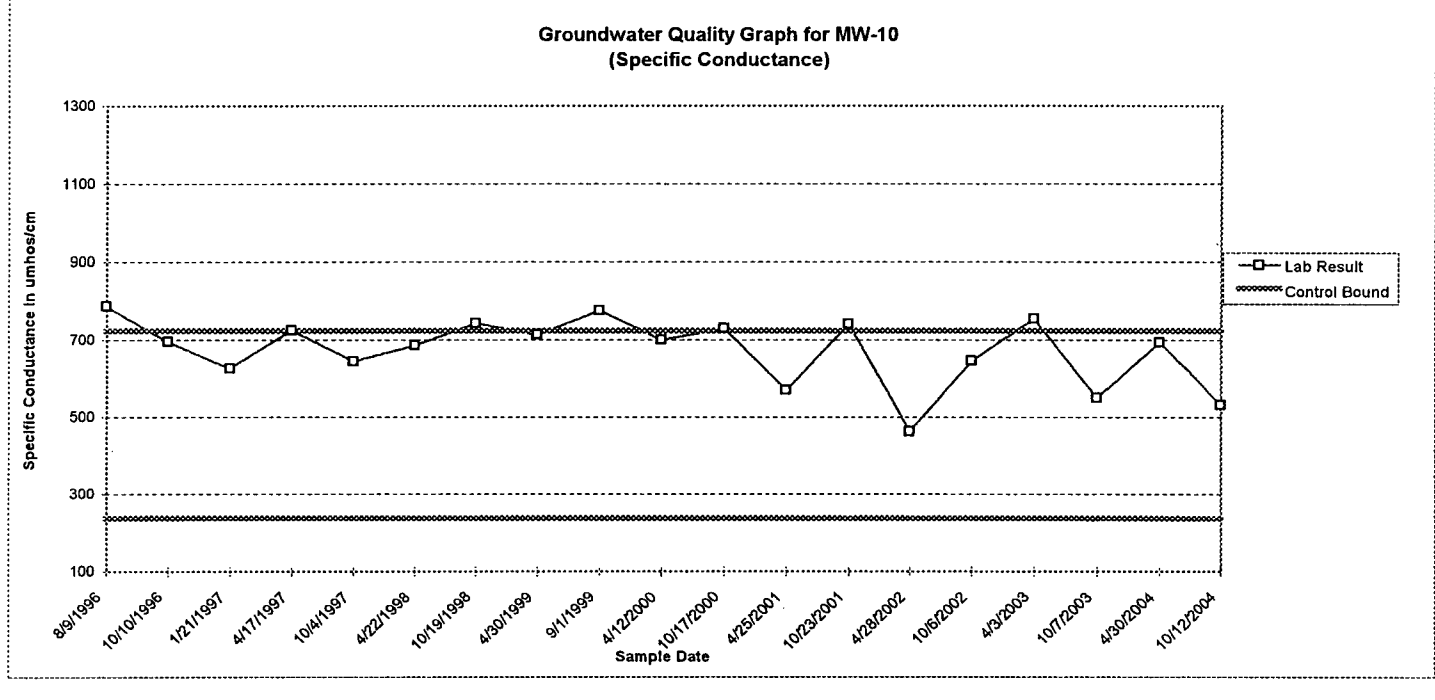
NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-10

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:

1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-9* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-9 Standard Deviation	MW-9 Mean	10/10/1996	1/21/1997	4/17/1997	7/15/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	1.074	10.360	8.7	10	11	12	11	11.3	11	9.7	10	-	-
Chemical Oxygen Demand (mg/l)	7.945	0.000	1.170	2.870	**2.5**	6.2	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	-	-
Ammonia Nitrogen (mg/l)	0.100	0.100	0.066	0.121	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	-	-
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	-	-
Benzene (µg/l)	0.250	0.250	0.079	0.275	**0.5**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	-	-
1,2-Dichloroethane (µg/l)	0.200	0.200	0.155	0.316	0.55	**0.2**	**0.2**	**0.2**	0.54	**0.2**	0.4	0.47	**0.2**	-	-
1,1-Dichloroethene (µg/l)	1.000	1.000	0.167	0.944	**0.5**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	-	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	-	-
Phenols, Total (mg/l)	0.010	0.010	0.006	0.014	-	-	-	-	0.021	-	**0.01**	-	**0.01**	-	-
Total Organic Halogens (mg/l)	0.005	0.005	0.011	0.017	-	-	-	-	0.018	-	0.005	-	0.027	-	-
Field Parameters															
pH	8.2	5.8	0.3	6.3	6.5	6.5	6	6.3	6.3	6.3	6.3	6.1	6.1	-	-
Specific Conductance (umhos/cm)	723	236	136	874	895	787	882	922	887	900	956	992	992	-	-

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-9* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-9 Standard Deviation	MW-9 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	1.074	10.360	-	-	-	-	-	-	-	**8.9**
Chemical Oxygen Demand (mg/l)	7.945	0.000	1.170	2.870	-	-	-	-	-	-	-	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.066	0.121	-	-	-	-	-	-	-	0.31
Iron, dissolved (mg/l)	0.050	0.050	0.000	0.050	-	-	-	-	-	-	-	**0.05**
Benzene (µg/l)	0.250	0.250	0.079	0.275	-	-	-	-	-	-	-	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.155	0.316	-	-	-	-	-	-	-	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.167	0.944	-	-	-	-	-	-	-	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	-	-	-	-	-	**0.5**
Trichloroethene (µg/l)	0.500	0.500	0.000	0.500	-	-	-	-	-	-	-	**0.5**
Phenols, Total (mg/l)	0.010	0.010	0.006	0.014	-	-	-	-	-	-	-	-
Total Organic Halogens (mg/l)	0.005	0.005	0.011	0.017	-	-	-	-	-	-	-	-
Field Parameters												
pH	8.2	5.8	0.3	6.3	-	-	-	-	-	-	-	6.9
Specific Conductance (umhos/cm)	723	236	136	874	-	-	-	-	-	-	-	527

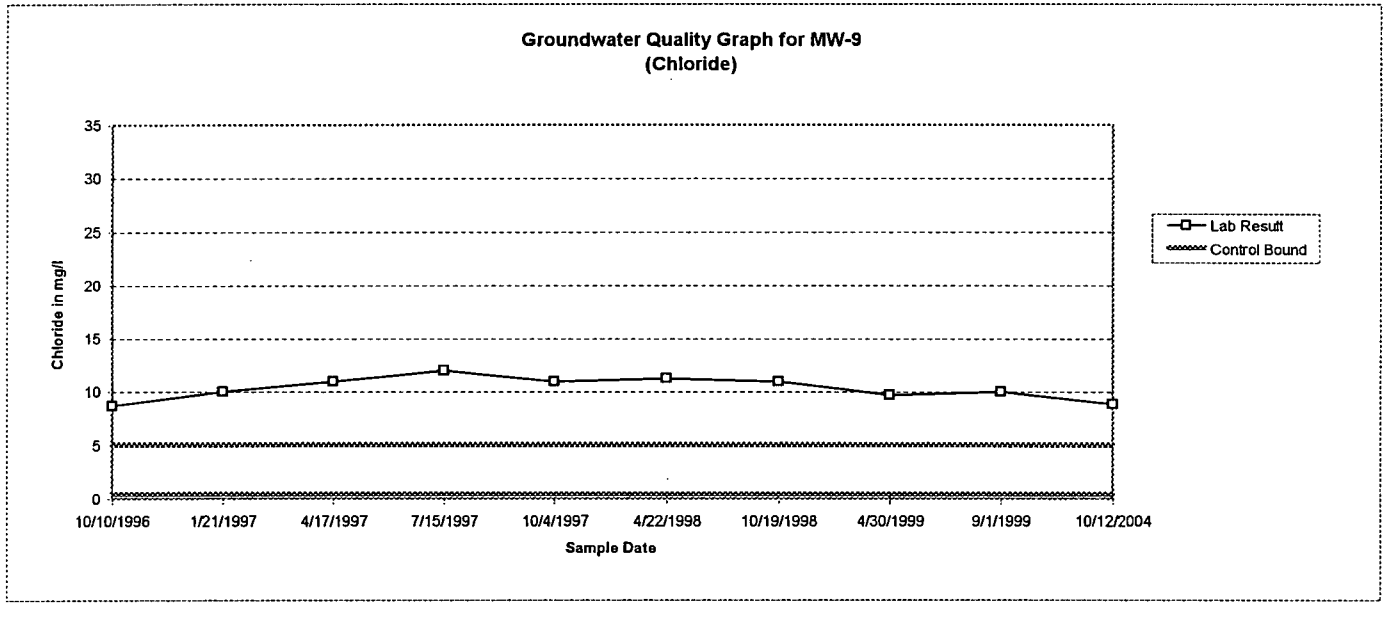
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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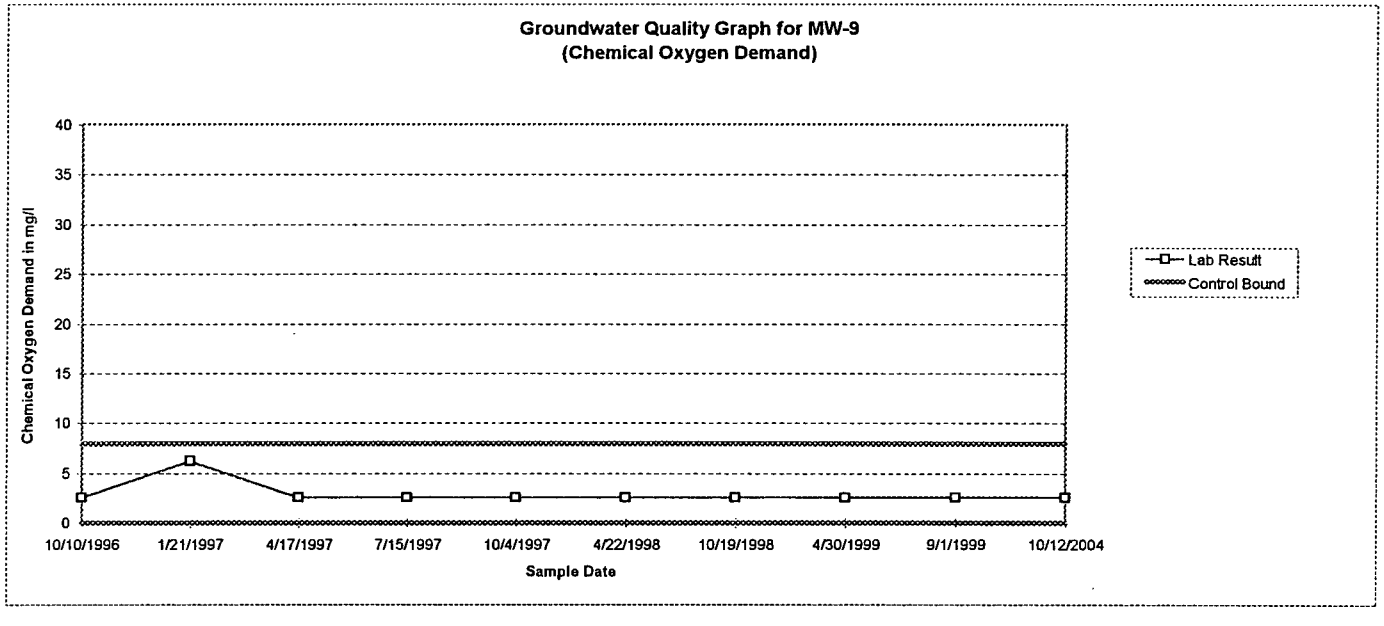
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

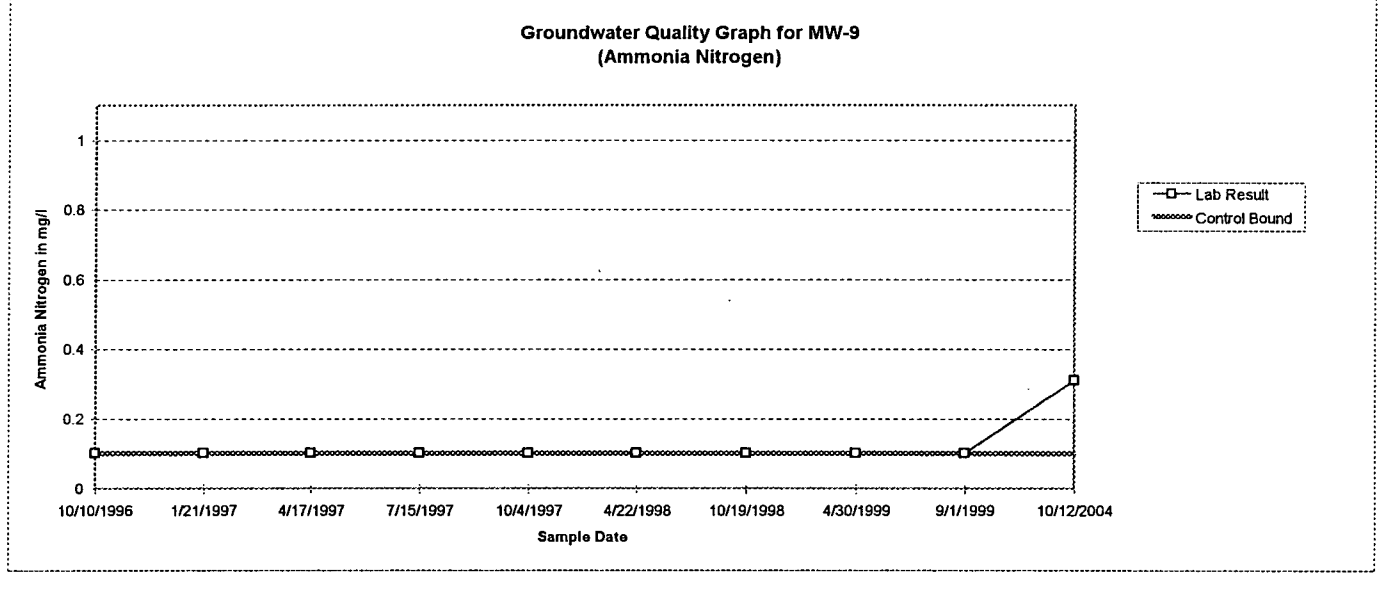


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

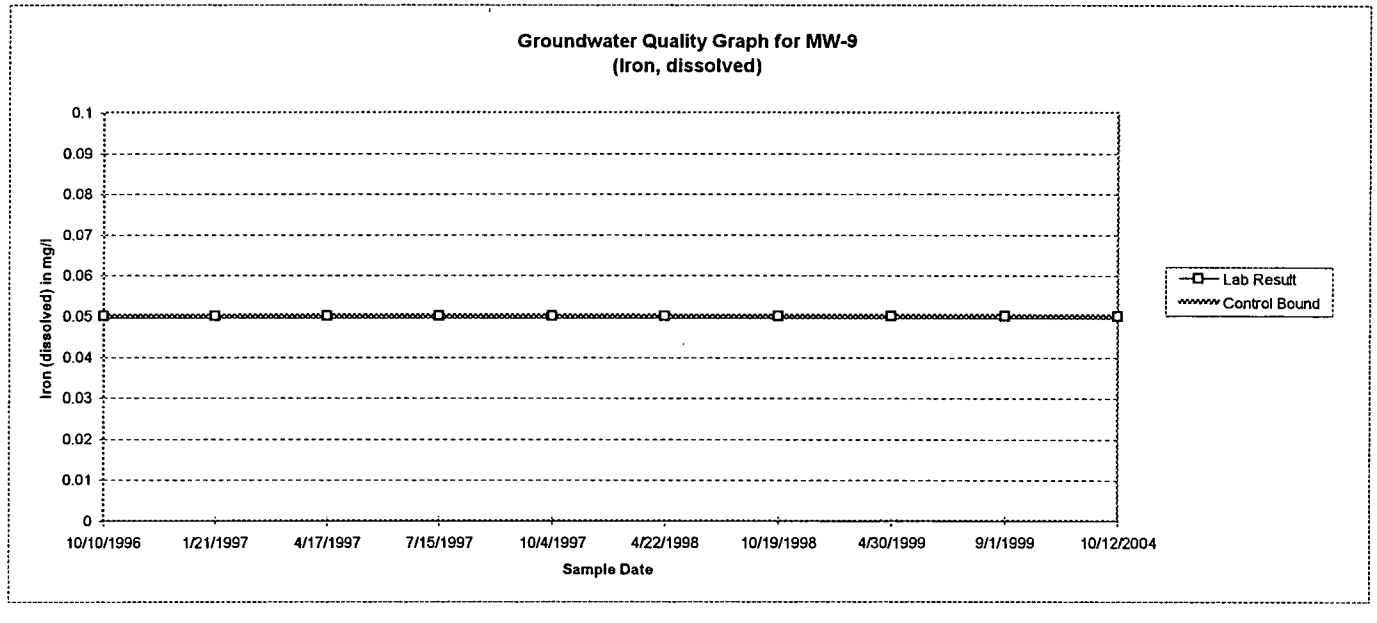


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
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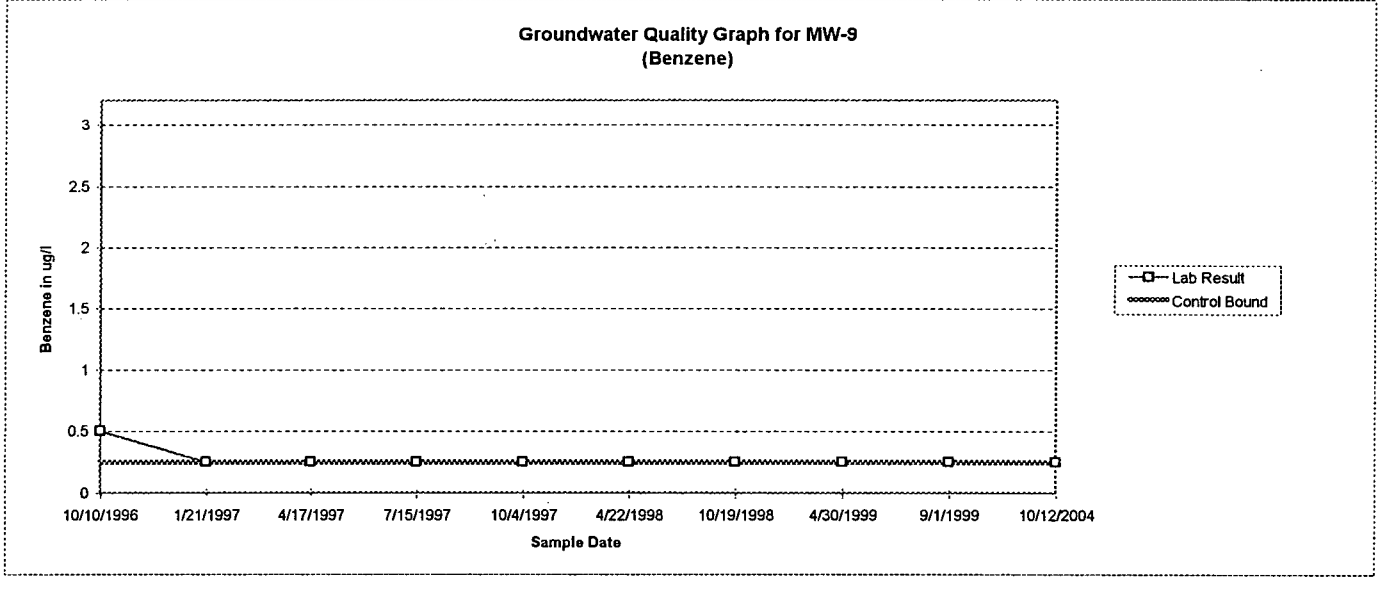
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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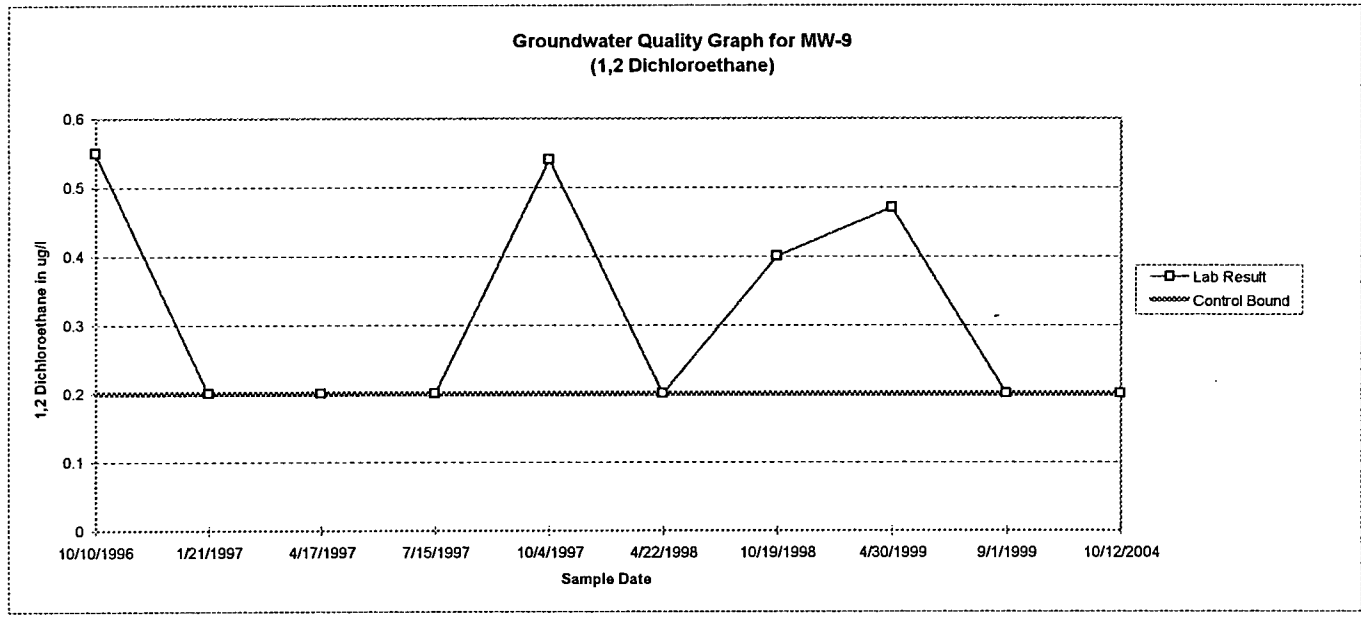
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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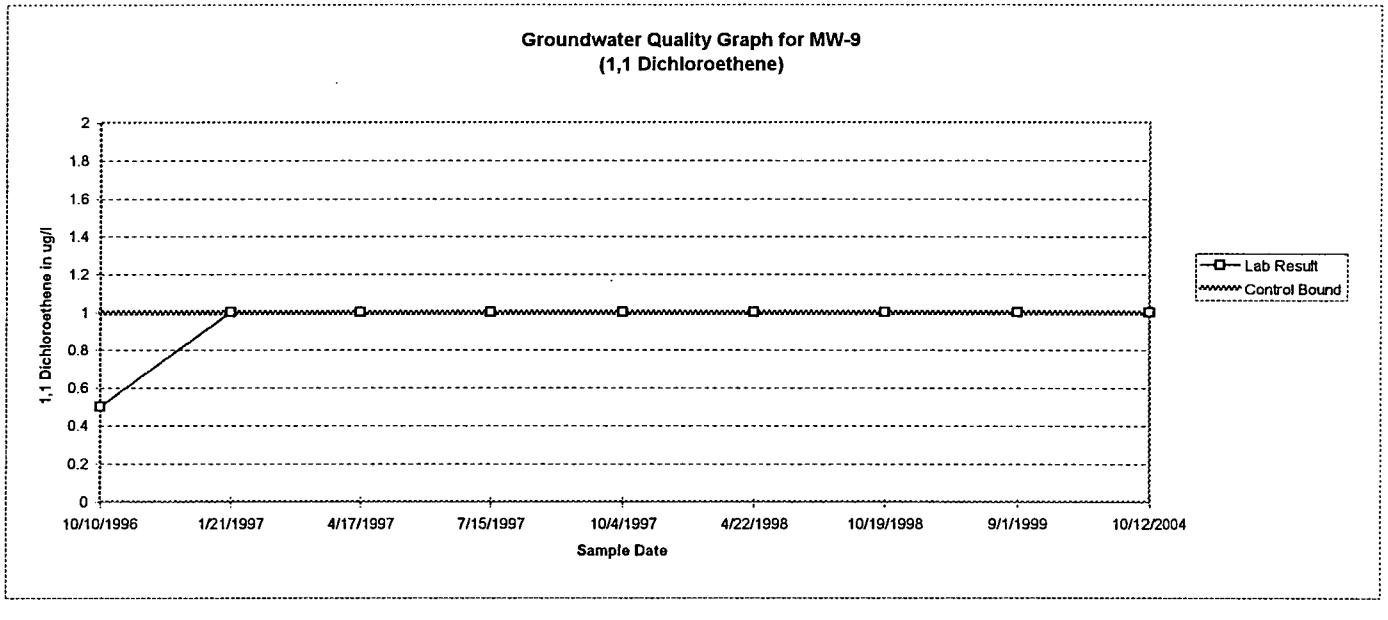
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

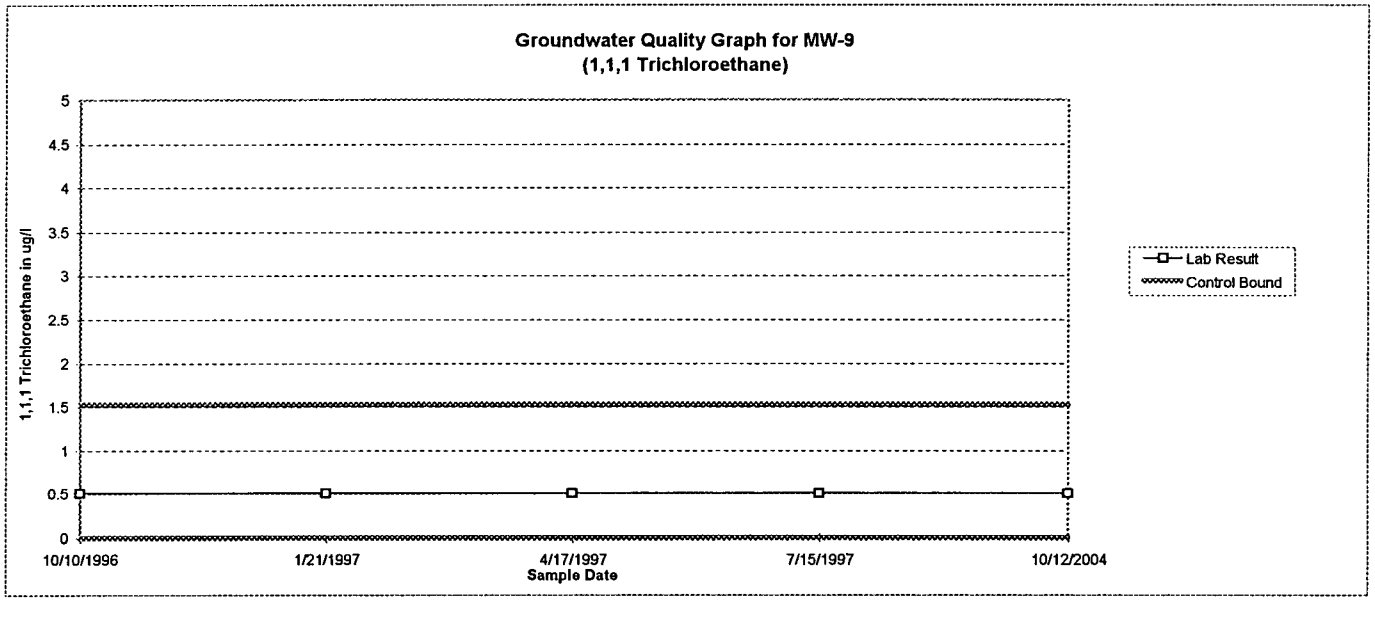


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:

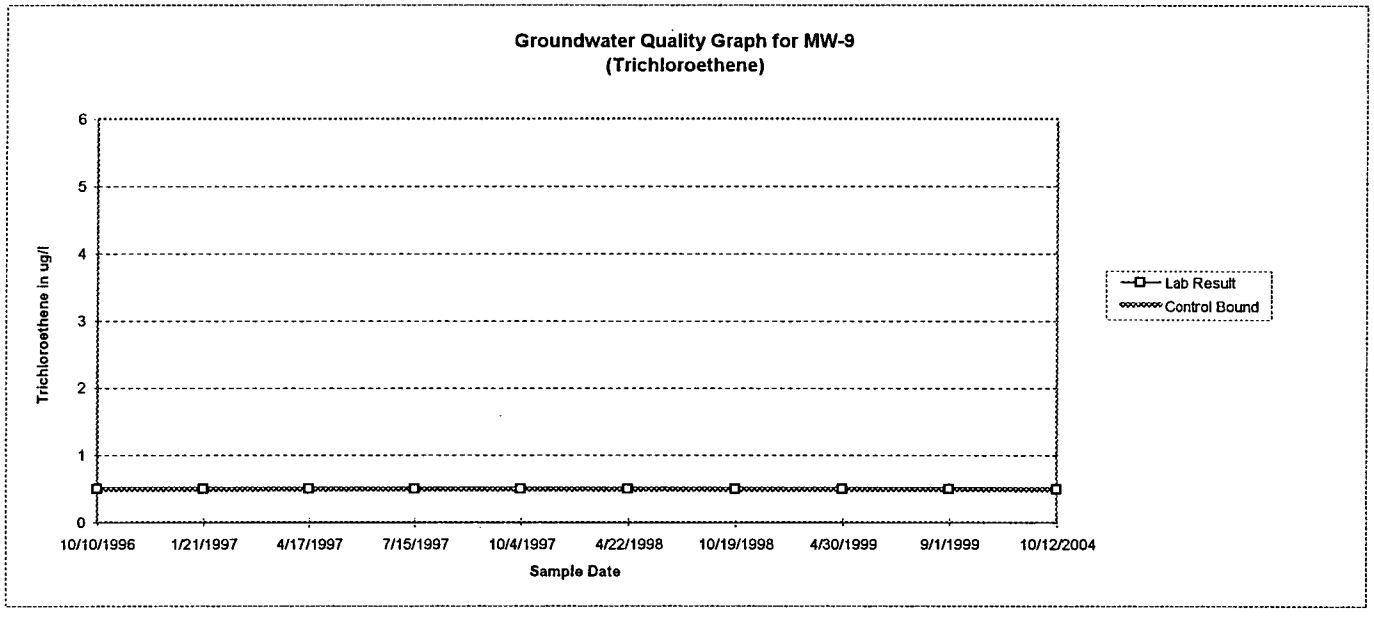
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
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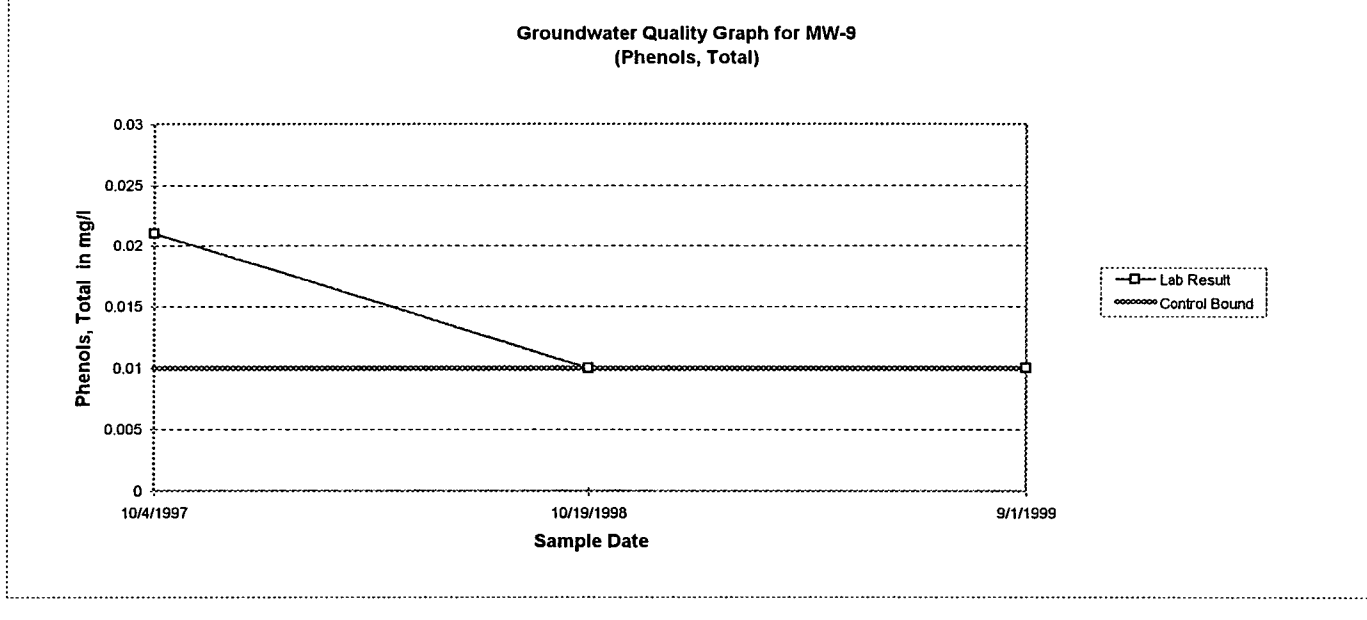
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
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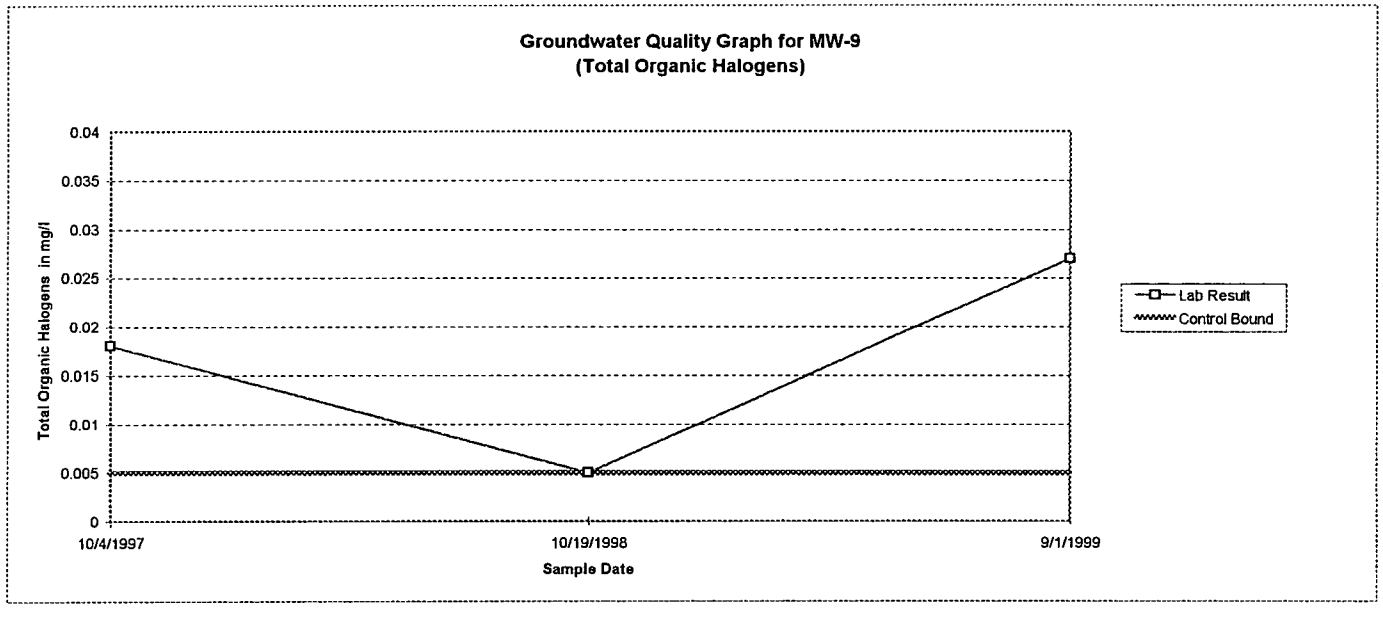
ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

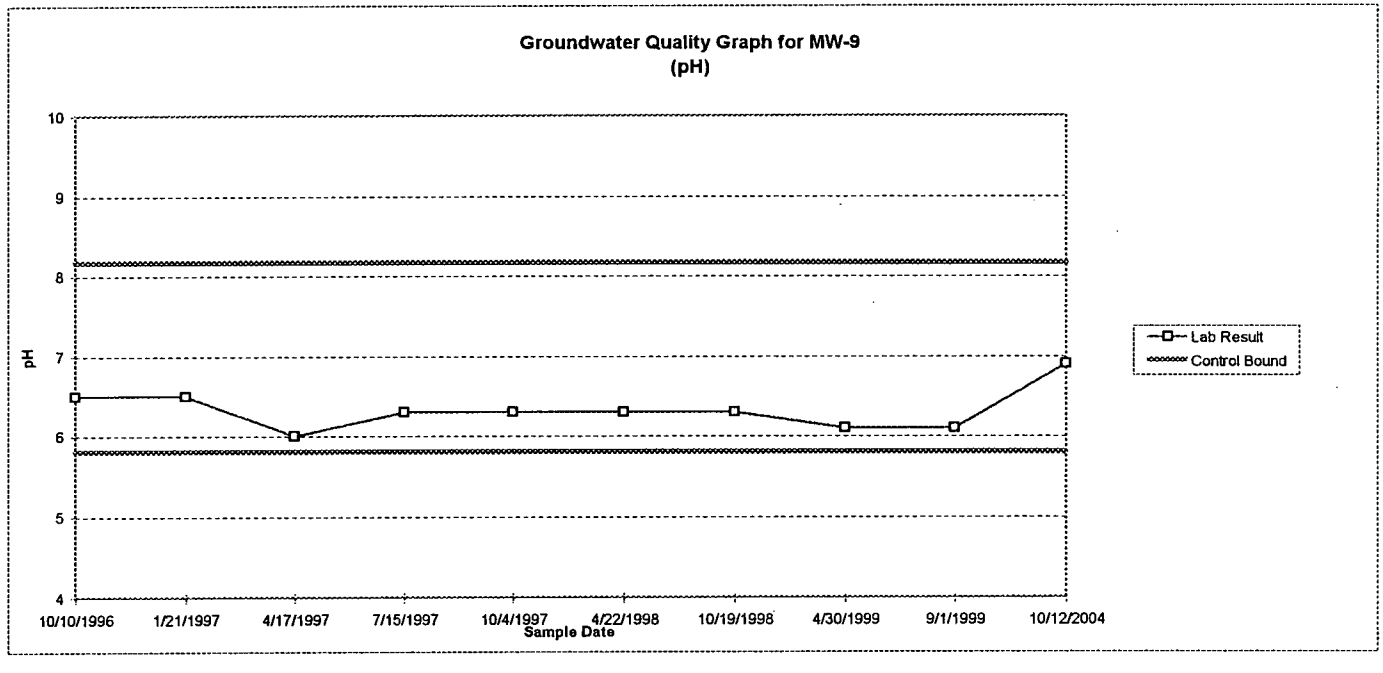


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

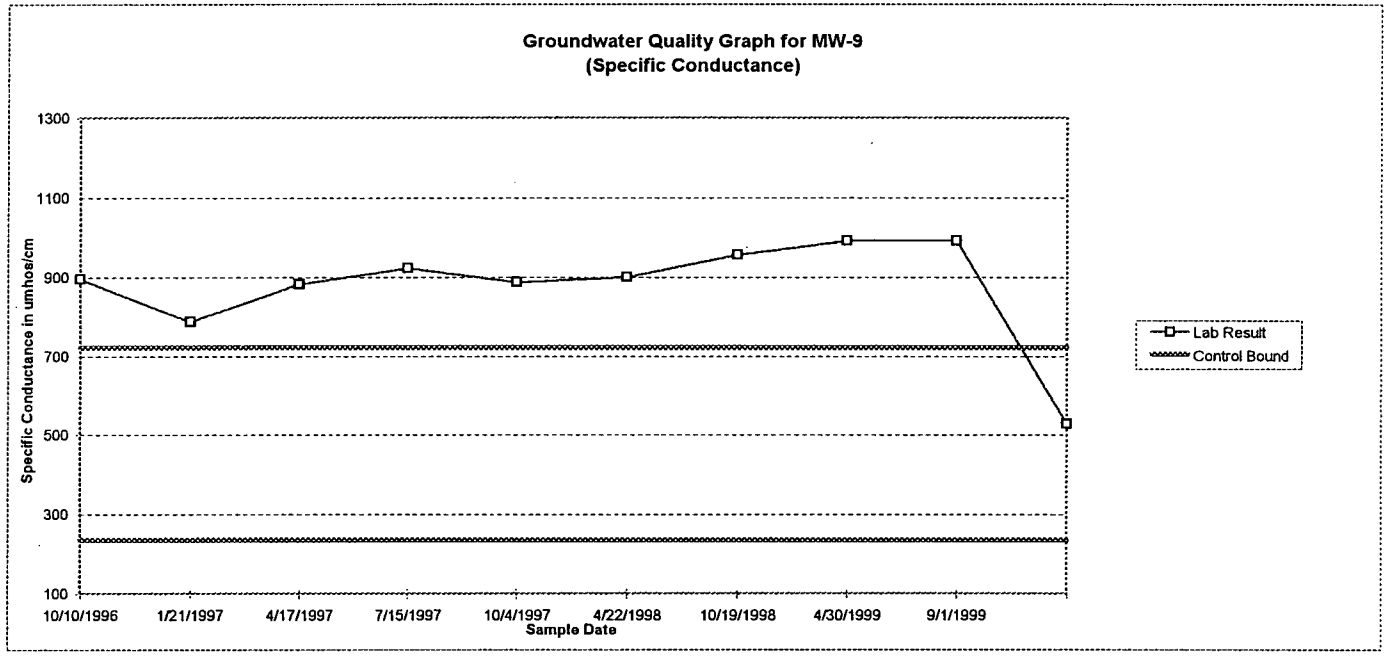


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-9

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
TERRACON PROJECT NO. 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-8* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-8 Standard Deviation	MW-8 Mean	10/11/1996	1/21/1997	4/17/1997	7/15/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	10.899	16.24	12	12	13	15	11	11	12	12	10	8.4	6.2
Chemical Oxygen Demand (mg/l)	7.945	0.000	2.542	3.83	**2.5**	7.9	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	5.0	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.025	0.11	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.075	0.08	**0.05**	0.13	**0.05**	**0.05**	0.18	**0.05**	**0.05**	**0.05**	0.33	0.19	**0.05**
Benzene (µg/l)	0.250	0.250	0.730	0.89	2.8	2.2	**0.25**	1.2	1.53	1.1	1.3	1.3	1.0	0.72	0.95
1,2-Dichloroethane (µg/l)	0.200	0.200	0.941	2.17	3	2.8	**0.2**	2.8	2.8	3.3	2.6	3.4	2.3	3.0	2.1
1,1-Dichloroethene (µg/l)	1.000	1.000	3.408	1.88	14.2	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.50	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	5.520	11.82	21.4	20.8	18.6	17.1	15.6	16.4	16.1	14.1	11.8	9.8	9.8
Phenols, Total (mg/l)	0.010	0.010	0.004	0.01	-	-	-	-	0.022	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.028	0.08	-	-	-	-	0.114	-	0.056	-	0.112	-	0.103
Field Parameters															
pH	8.2	5.8	0.4	6.4	6.6	6.4	6.2	6.3	6.2	6.3	6.2	6.1	5.9	5.8	6.2
Specific Conductance (umhos/cm)	723	236	154	920	923	823	896	929	888	945	1003	1050	1092	970	942

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-8* *(Down-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-8 Standard Deviation	MW-8 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	10.899	16.24	9.4	21.6	55.4	26.7	14.2	21.6	14.3	22.8
Chemical Oxygen Demand (mg/l)	7.945	0.000	2.542	3.83	**2.5**	**2.5**	5.6	11	**2.5**	8.2	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.025	0.11	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.21	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.075	0.08	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.730	0.89	**0.25**	**0.25**	**0.25**	**0.25**	0.8	**0.25**	**0.25**	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	0.941	2.17	2.7	2.3	1.9	1.61	**0.2**	1.55	1.39	1.21
1,1-Dichloroethene (µg/l)	1.000	1.000	3.408	1.88	-	-	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.50	-	-	-	-	-	-	**0.5**	**0.5**
Trichloroethene (µg/l)	0.500	0.500	5.520	11.82	7.8	7.3	6.4	7.0	9.5	5.02	5.97	4.06
Phenols, Total (mg/l)	0.010	0.010	0.004	0.01	-	**0.01**	**0.01**	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.028	0.08	-	0.075	0.077	0.072	0.074	-	0.026	-
Field Parameters												
pH	8.2	5.8	0.4	6.4	6.8	6.8	6.5	7	6.8	7.1	6.5	6.8
Specific Conductance (umhos/cm)	723	236	154	920	1034	538	984	895	1060	1115	832	563

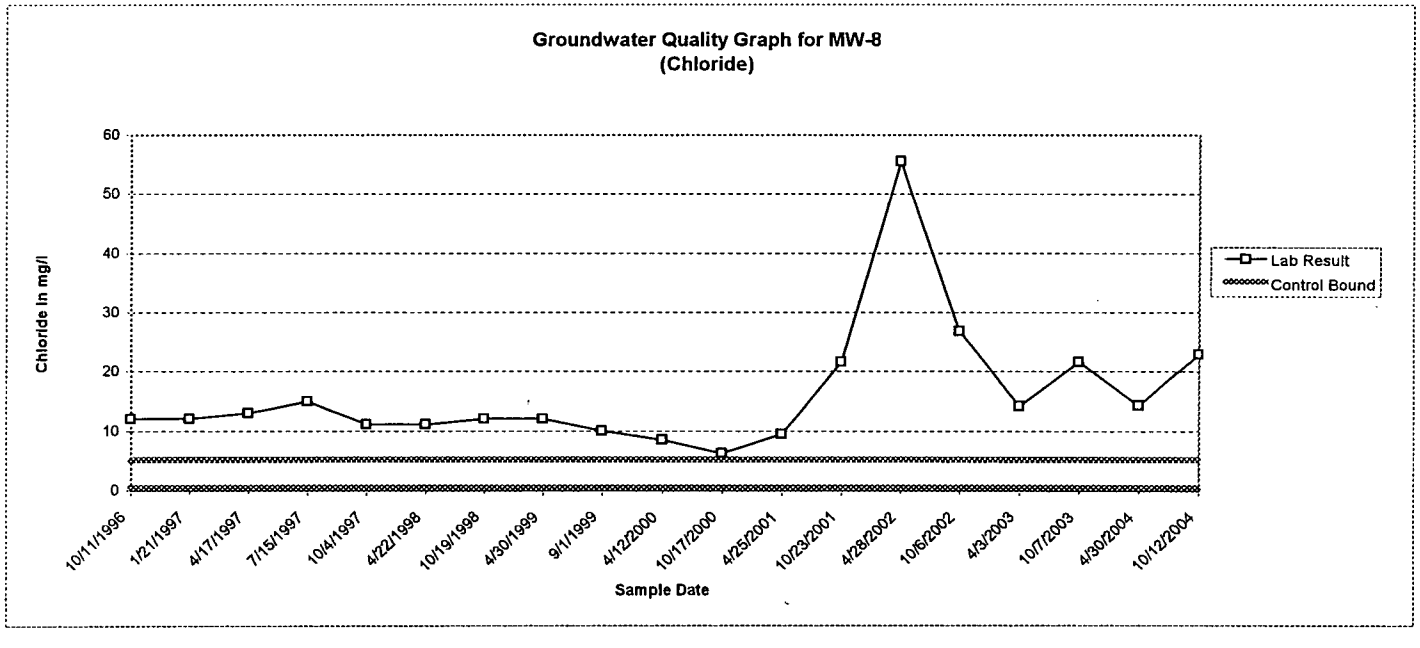
NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

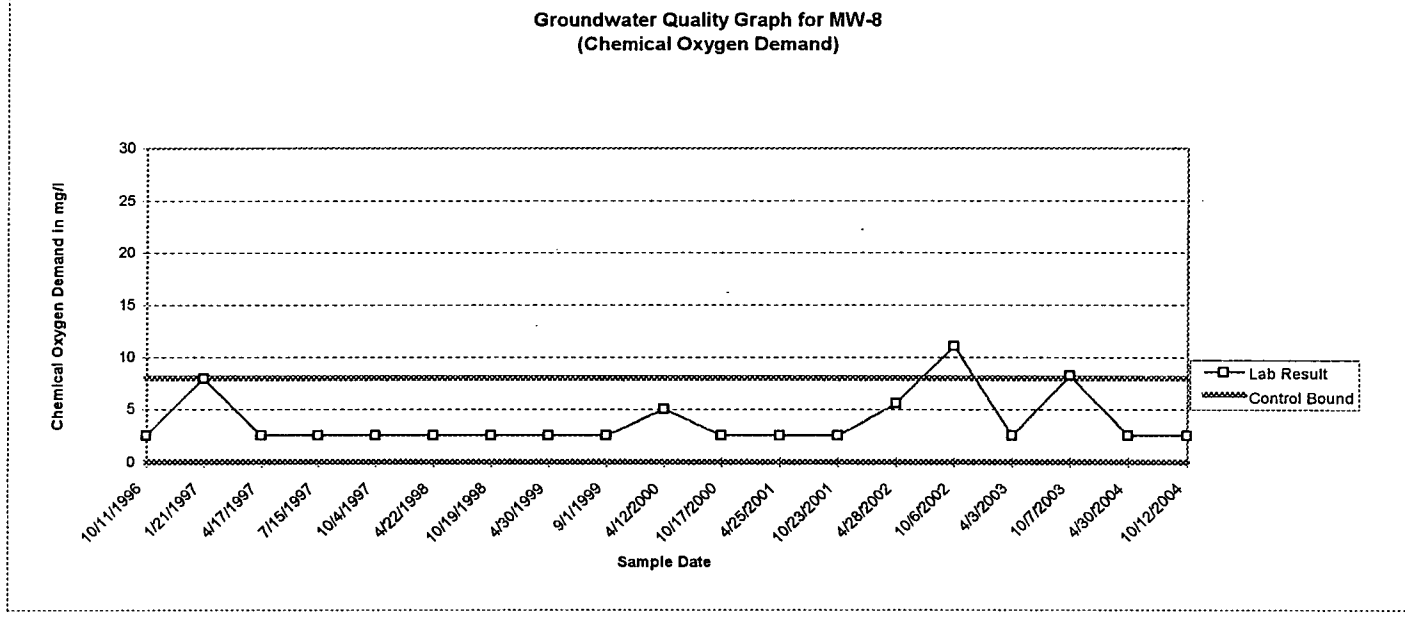


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

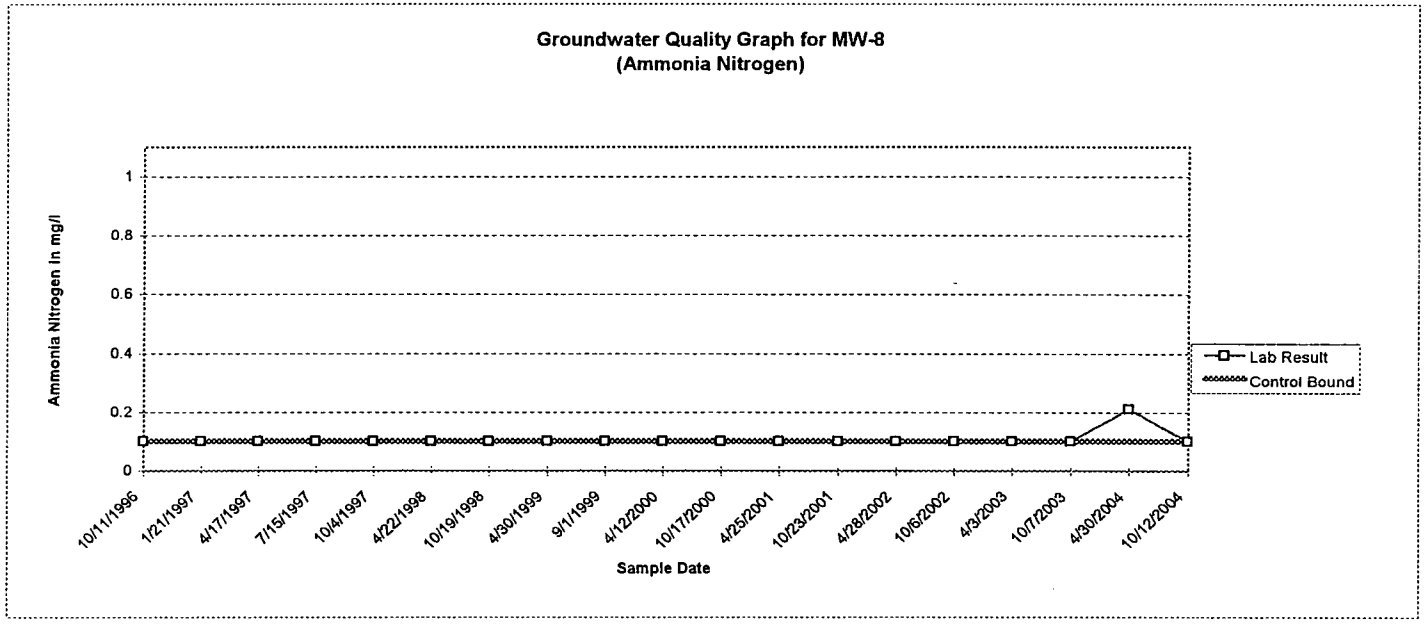


NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.
2) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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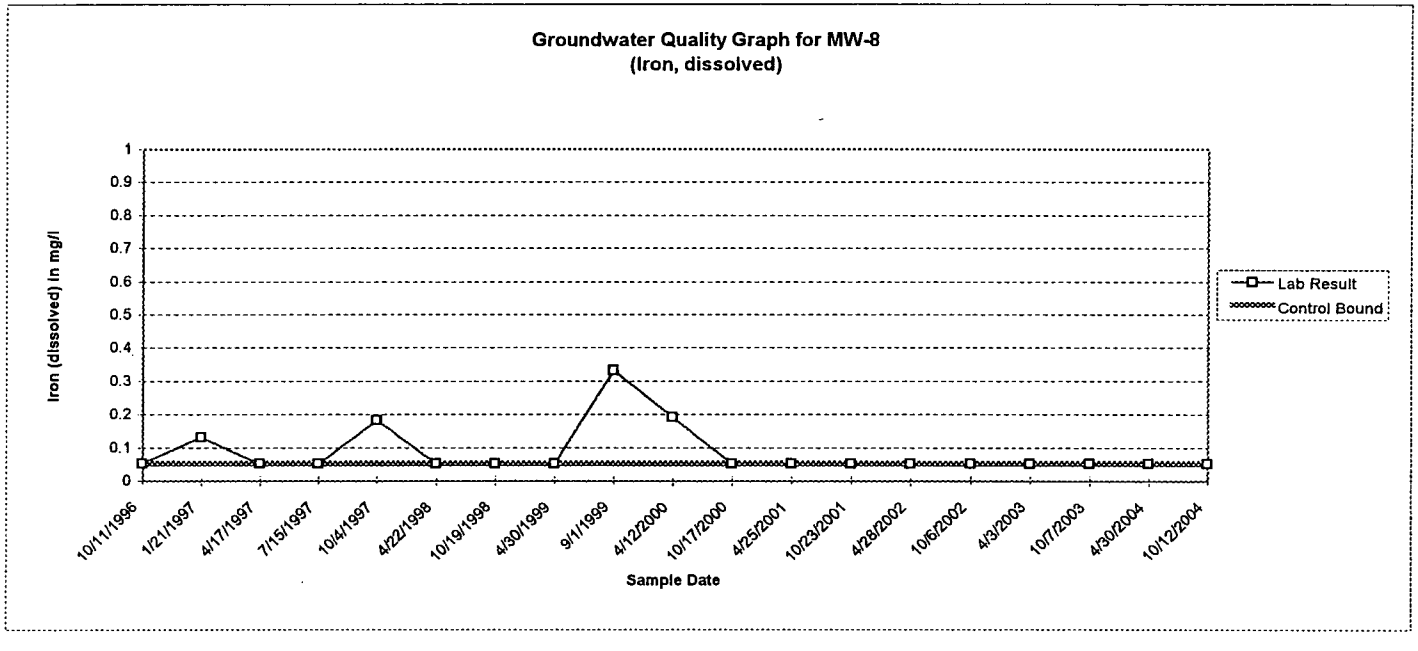
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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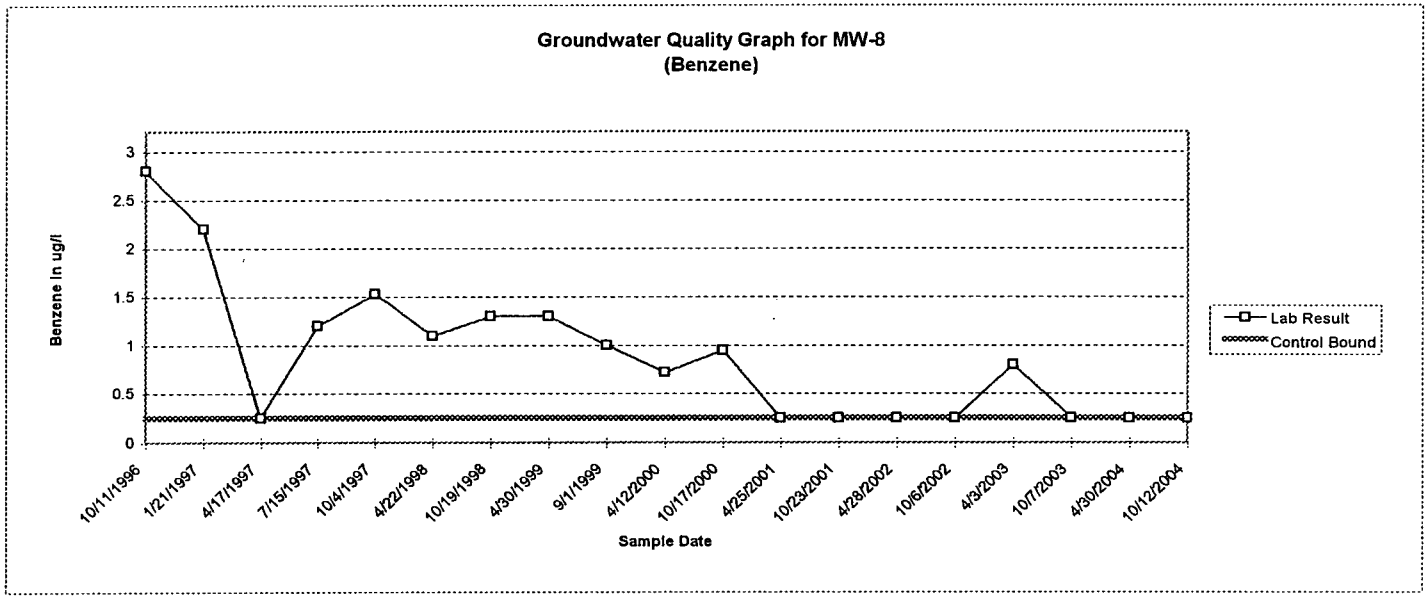
ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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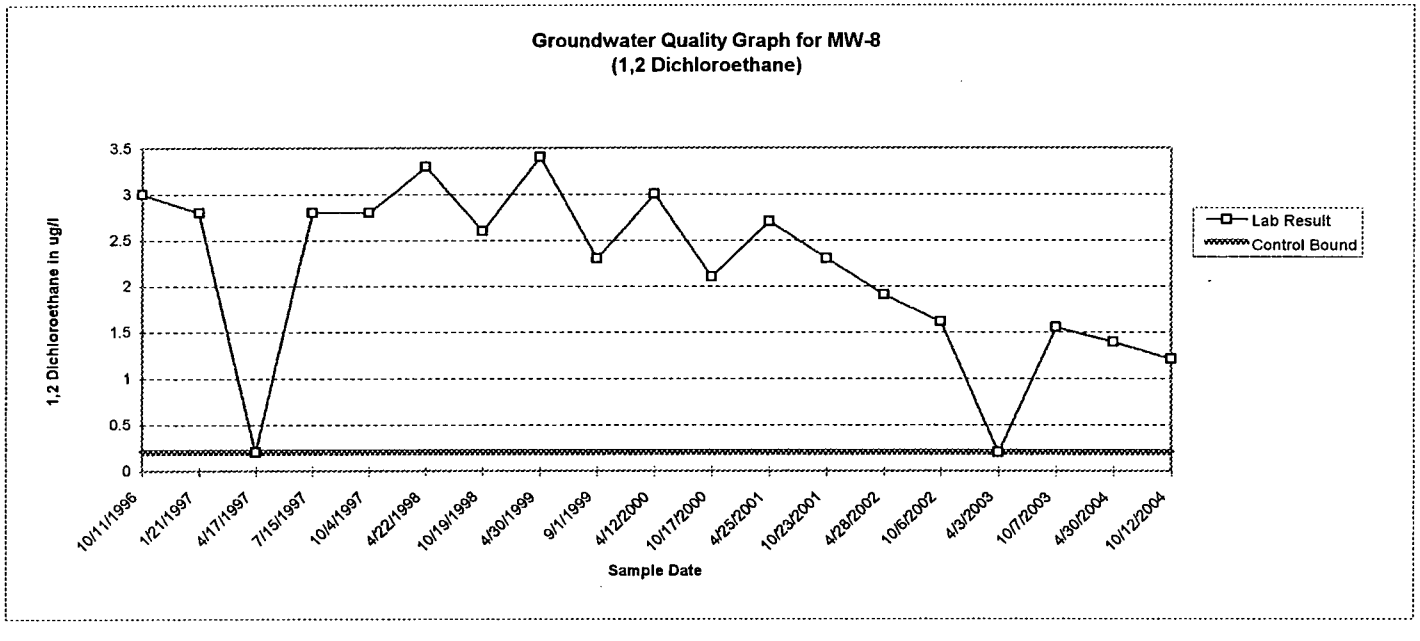
ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-8

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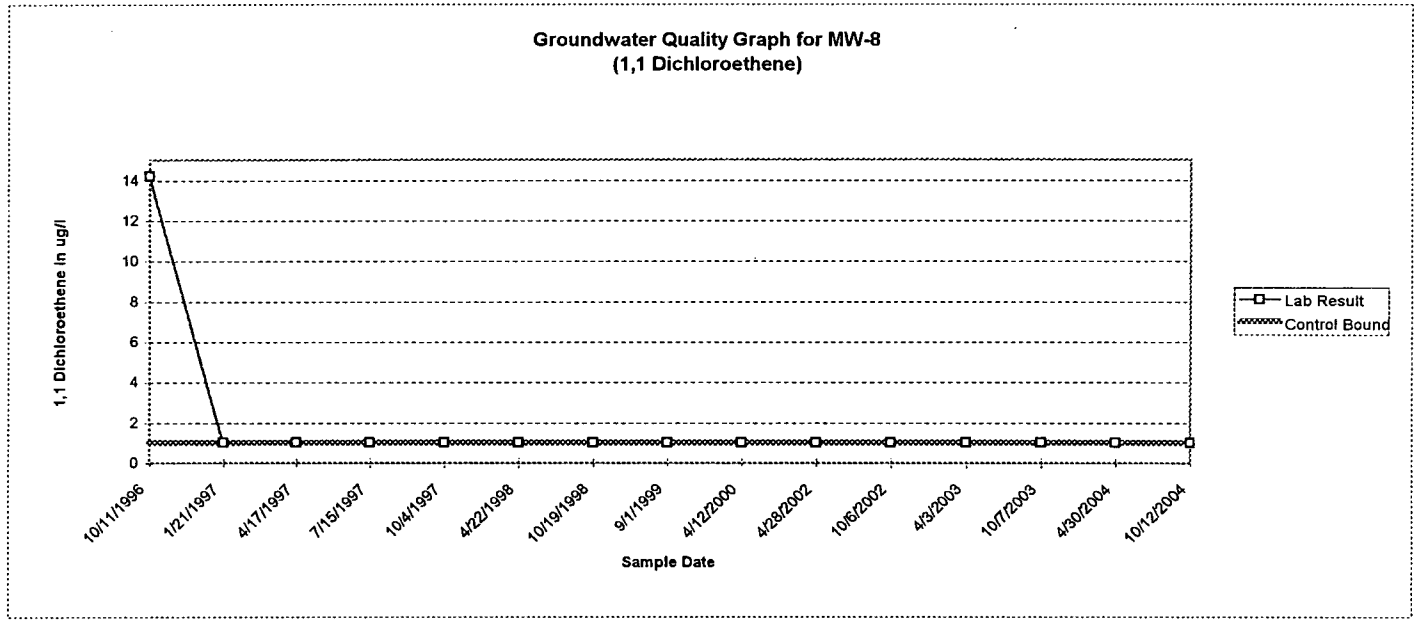
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
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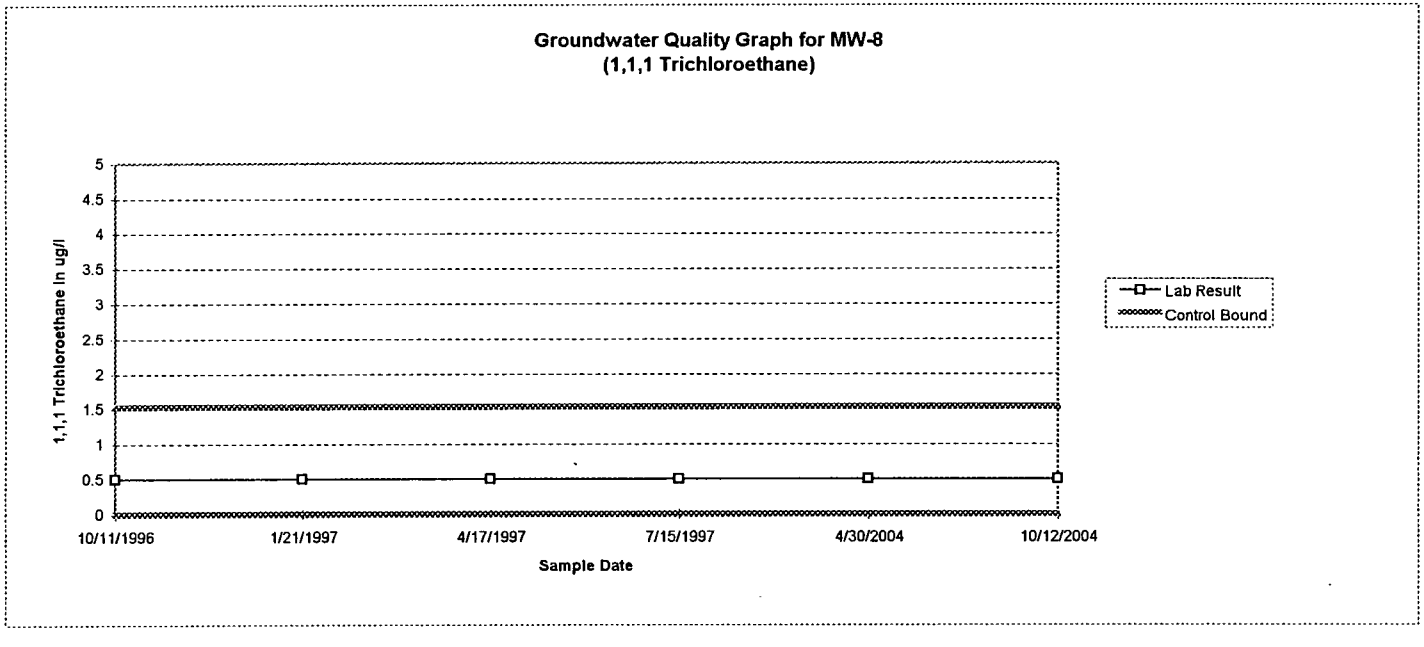
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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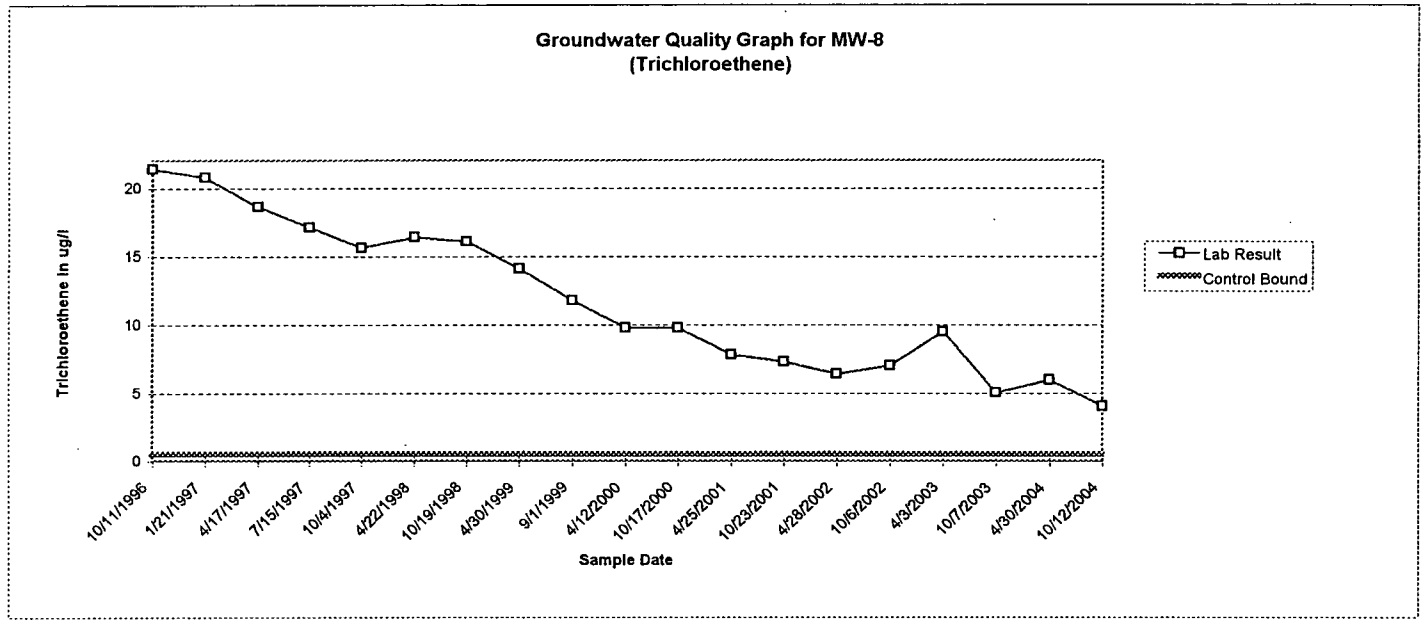
ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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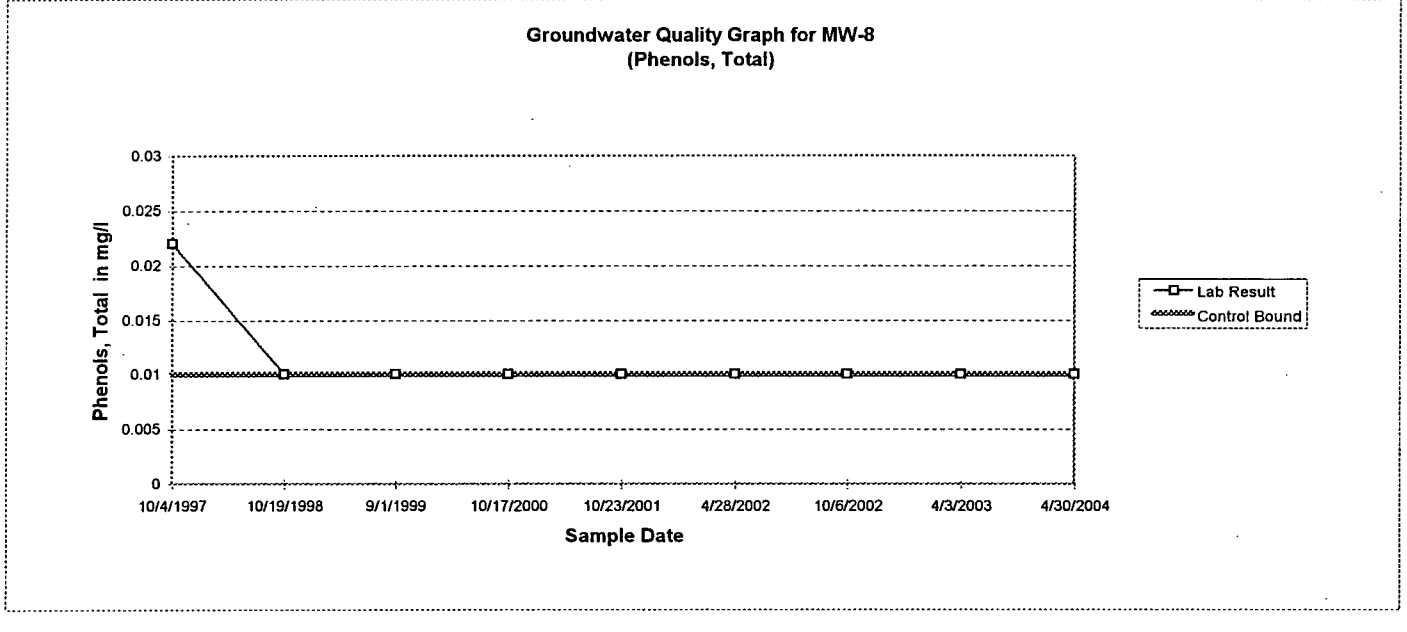
ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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PROJECT NO. TERRACON 40905033

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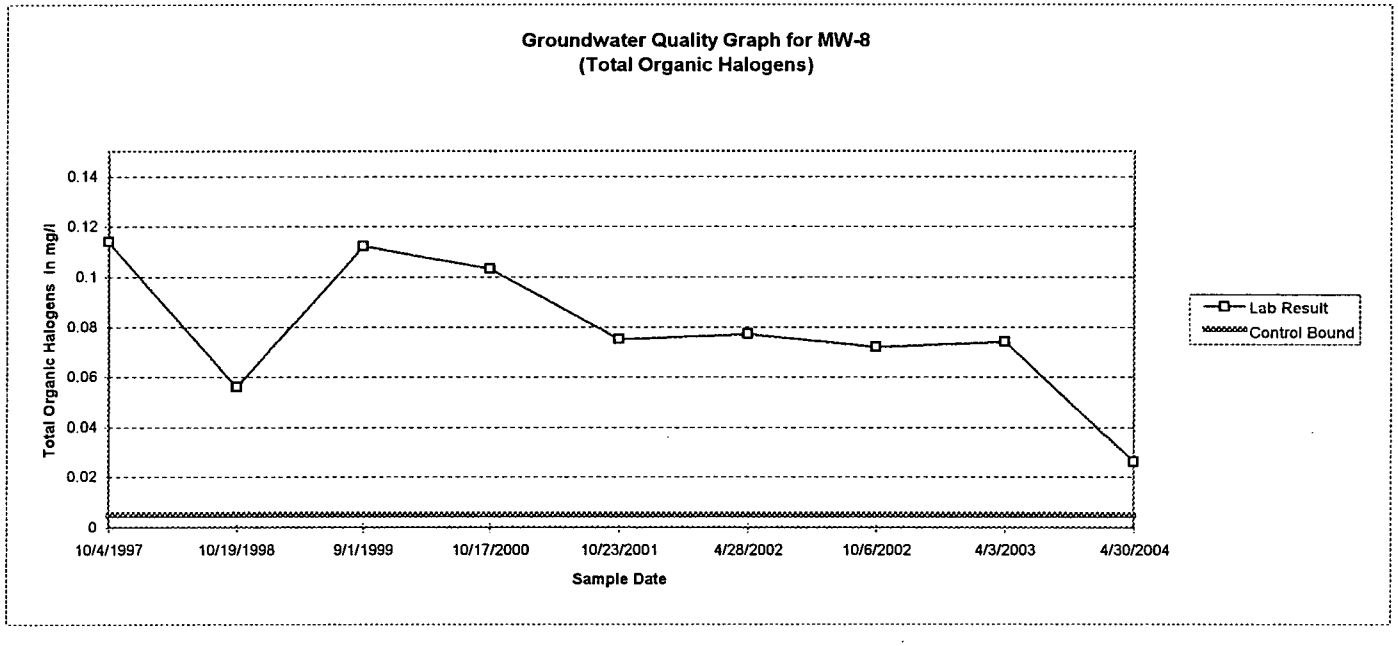

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ANALYSIS SHEET MW-8

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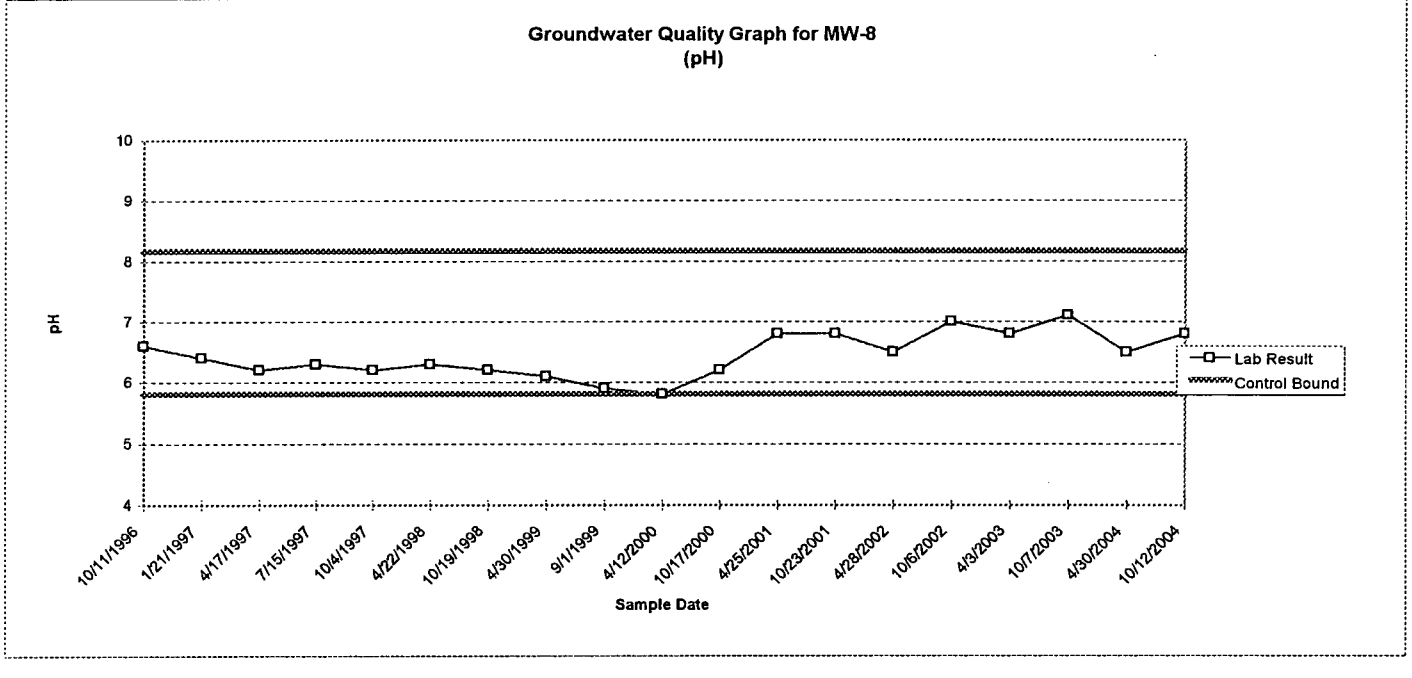

NOTE:
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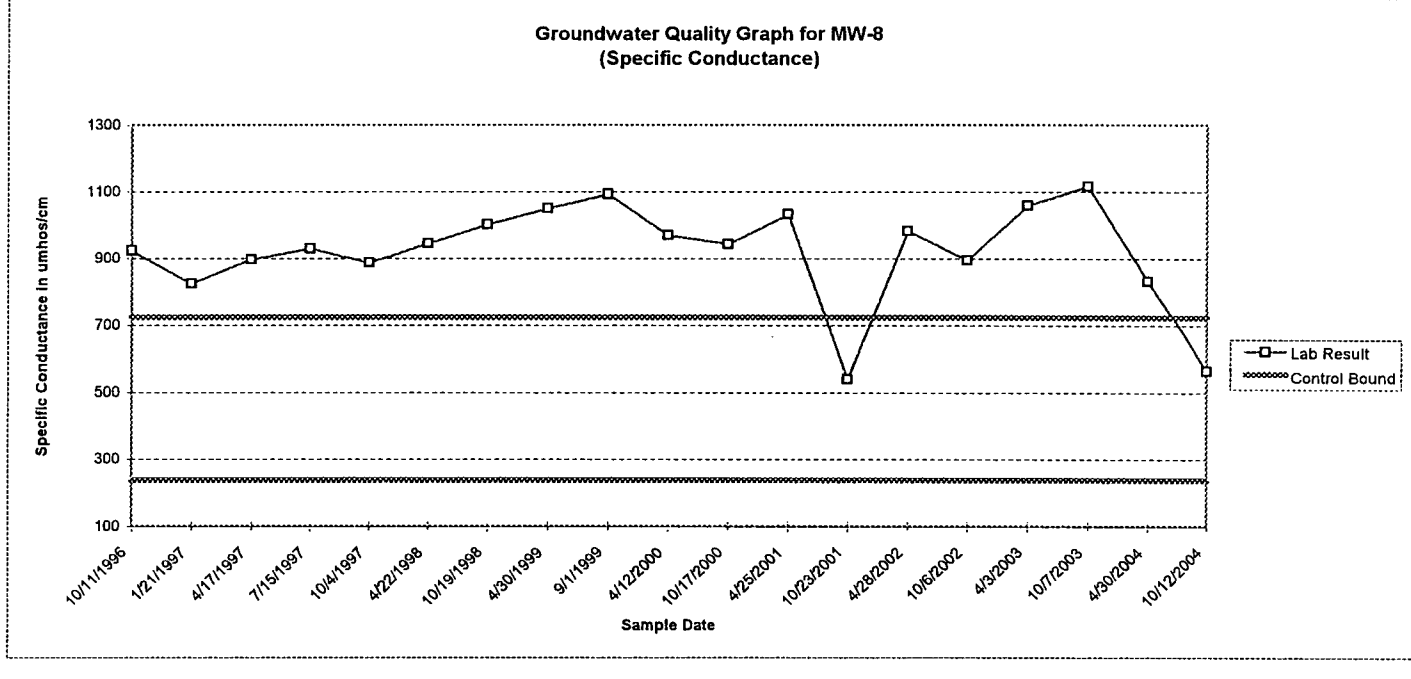
ANALYSIS SHEET MW-8

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-7

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-7* *(Up-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE										
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-7 Standard Deviation	MW-7 Mean	7/12/1996	10/10/1996	1/21/1997	4/17/1997	10/4/1997	4/22/1998	10/19/1998	4/30/1999	9/1/1999	4/12/2000	10/17/2000
Laboratory Parameters															
Chloride (mg/l)	5.111	0.454	2.143	5.716	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	6.9	6.6	6.7	5.9	6.4	5.5
Chemical Oxygen Demand (mg/l)	7.945	0.000	9.096	5.779	42.0	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.038	0.113	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.040	0.066	**0.05**	**0.05**	**0.05**	**0.05**	0.12	**0.05**	**0.05**	**0.05**	**0.05**	0.13	**0.05**
Benzene (µg/l)	0.250	0.250	0.240	0.543	**0.5**	**0.5**	**0.25**	**0.25**	0.75	0.74	0.81	0.8	**0.25**	0.8	**0.25**
1,2-Dichloroethane (µg/l)	0.200	0.200	4.342	1.611	10.6	16.6	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.176	0.933	**0.5**	**0.5**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	-	**1.0**	**1.0**	-
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	**0.5**	**0.5**	**0.5**	**0.5**	-	-	-	-	-	-	-
Trichloroethene (µg/l)	0.500	0.500	2.536	9.316	4.7	5.1	6.6	12.2	9.8	10.9	8.2	12.5	8.2	8.4	6.4
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	-	-	-	**0.01**	-	**0.01**	-	**0.01**	-	**0.01**
Total Organic Halogens (mg/l)	0.005	0.005	0.016	0.082	-	-	-	-	0.095	-	0.051	-	0.104	-	0.067
Field Parameters															
pH	8.2	5.8	0.4	6.3	6.1	6.5	6.5	6	6.2	6.1	6.2	6.1	5.9	5.6	6
Specific Conductance (umhos/cm)	723	236	180	1021	738	870	840	919	904	1001	1050	1094	1127	1041	1002

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
4) One-half of the MDL was plotted for non-detectable parameters.
5) A lower control limit of zero (0) was used for those parameters in which a negative lower control limit was calculated.
6) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

ANALYSIS SHEET MW-7

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET

SAMPLE LOCATION NO. *MW-7* *(Up-gradient)*

ANALYSIS PERFORMED BY: *TestAmerica Laboratories* *SAMPLED BY:* *Plymouth County Landfill Personnel*

PARAMETER	Statistical Considerations				SAMPLE DATE							
	Upper Control Limit via MW-17	Lower Control Limit via MW-17	MW-7 Standard Deviation	MW-7 Mean	4/25/2001	10/23/2001	4/28/2002	10/6/2002	4/3/2003	10/7/2003	4/30/2004	10/12/2004
Laboratory Parameters												
Chloride (mg/l)	5.111	0.454	2.143	5.716	5.9	7.5	7.5	6.2	6.1	8.2	8.8	7.9
Chemical Oxygen Demand (mg/l)	7.945	0.000	9.096	5.779	**2.5**	**2.5**	7.3	9.3	7.3	**2.5**	8.9	**2.5**
Ammonia Nitrogen (mg/l)	0.100	0.100	0.038	0.113	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	0.23	0.21	**0.1**
Iron, dissolved (mg/l)	0.050	0.050	0.040	0.066	0.2	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
Benzene (µg/l)	0.250	0.250	0.240	0.543	0.6	1.0	0.5	**0.25**	**0.25**	0.56	0.6	0.66
1,2-Dichloroethane (µg/l)	0.200	0.200	4.342	1.611	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
1,1-Dichloroethene (µg/l)	1.000	1.000	0.176	0.933	-	-	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
1,1,1-Trichloroethane (ug/l)	1.529	0.000	0.000	0.500	-	-	-	-	-	-	**0.5**	**0.5**
Trichloroethene (µg/l)	0.500	0.500	2.536	9.316	8.4	10.7	12.0	13.4	10.4	10.7	11.0	7.4
Phenols, Total (mg/l)	0.010	0.010	0.000	0.010	-	**0.01**	**0.01**	**0.01**	**0.01**	-	**0.01**	-
Total Organic Halogens (mg/l)	0.005	0.005	0.016	0.082	-	0.083	0.086	0.093	0.073	-	0.085	-
Field Parameters												
pH	8.2	5.8	0.4	6.3	6.7	6.7	6.3	6.5	6.7	7.1	-	6.5
Specific Conductance (umhos/cm)	723	236	180	1021	1147	1102	784	1232	1127	910	-	1495

NOTE:

1) Statistical analysis included VOC chemicals that exhibited detectable concentrations during background monitoring.
2) Results shown in bold represent one-half of the laboratory detection limt (MDL) for parameters not detected.
3) One-half of the MDL was used for non-detected parameters to compute their respective control limits (mean +/- two times the standard deviation for the chemicals observed at MW-17).
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ANALYSIS SHEET MW-7

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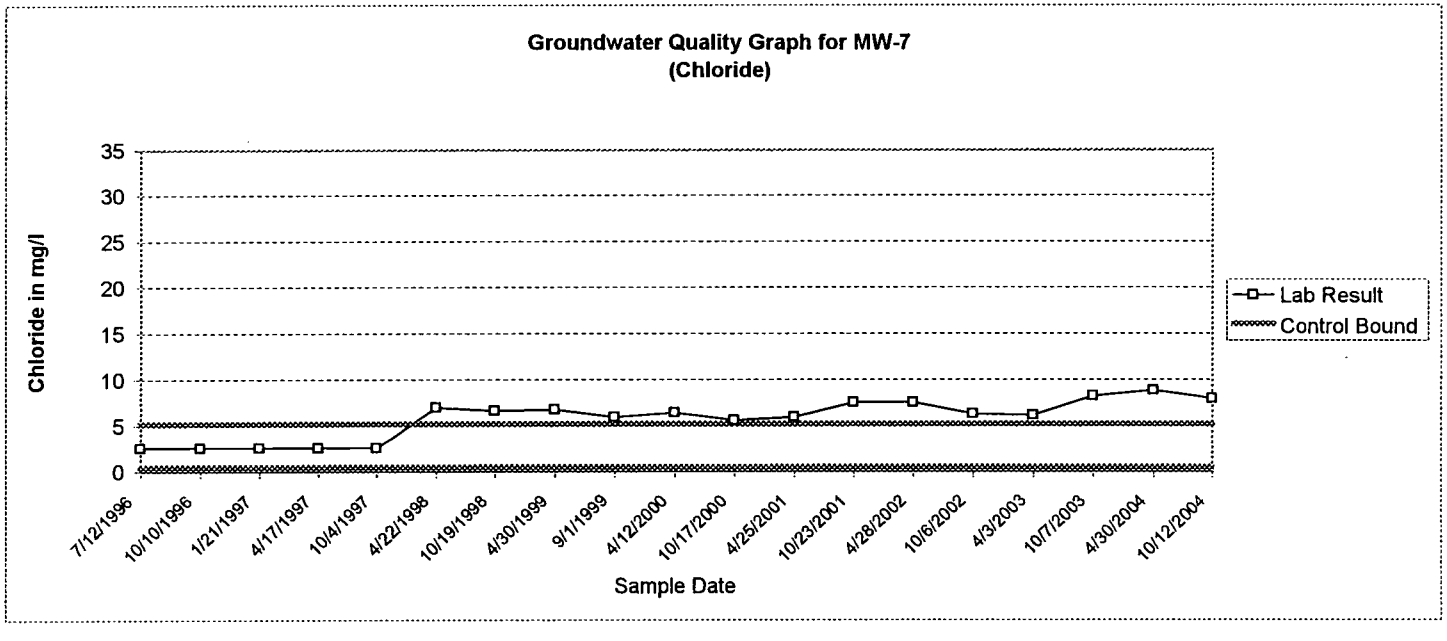
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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ANALYSIS SHEET MW-7

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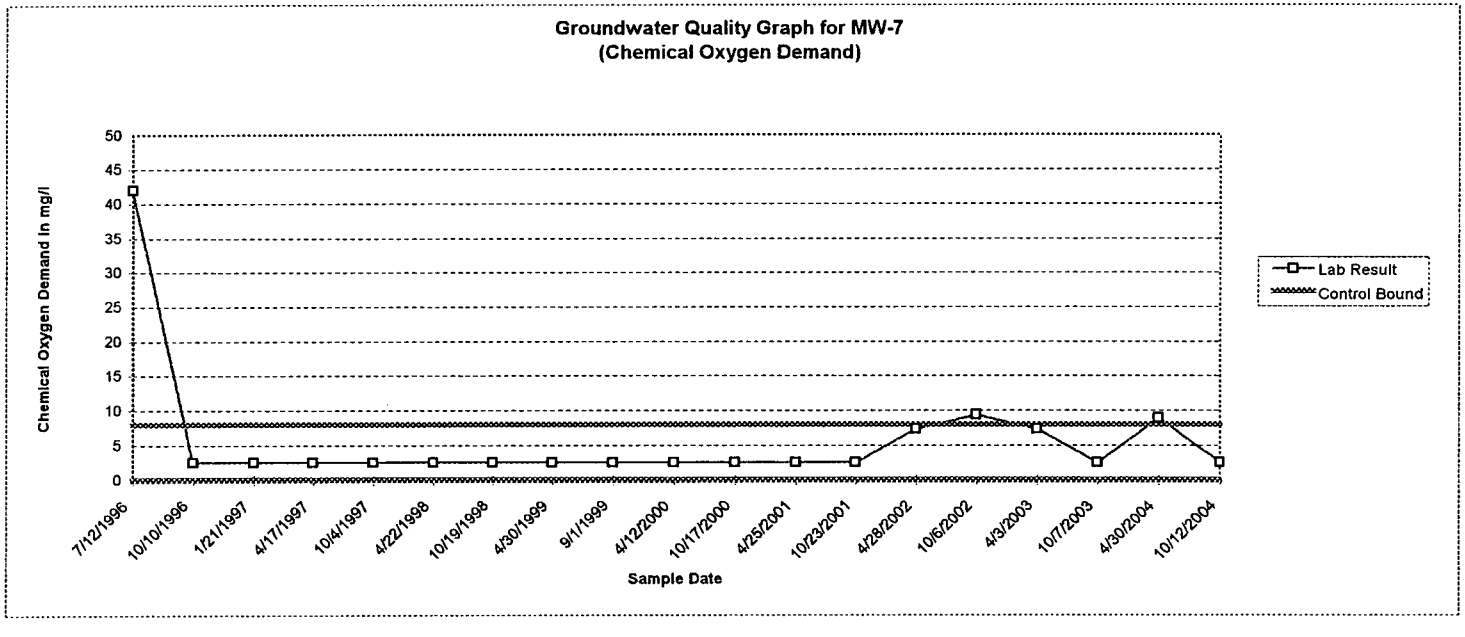
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-7

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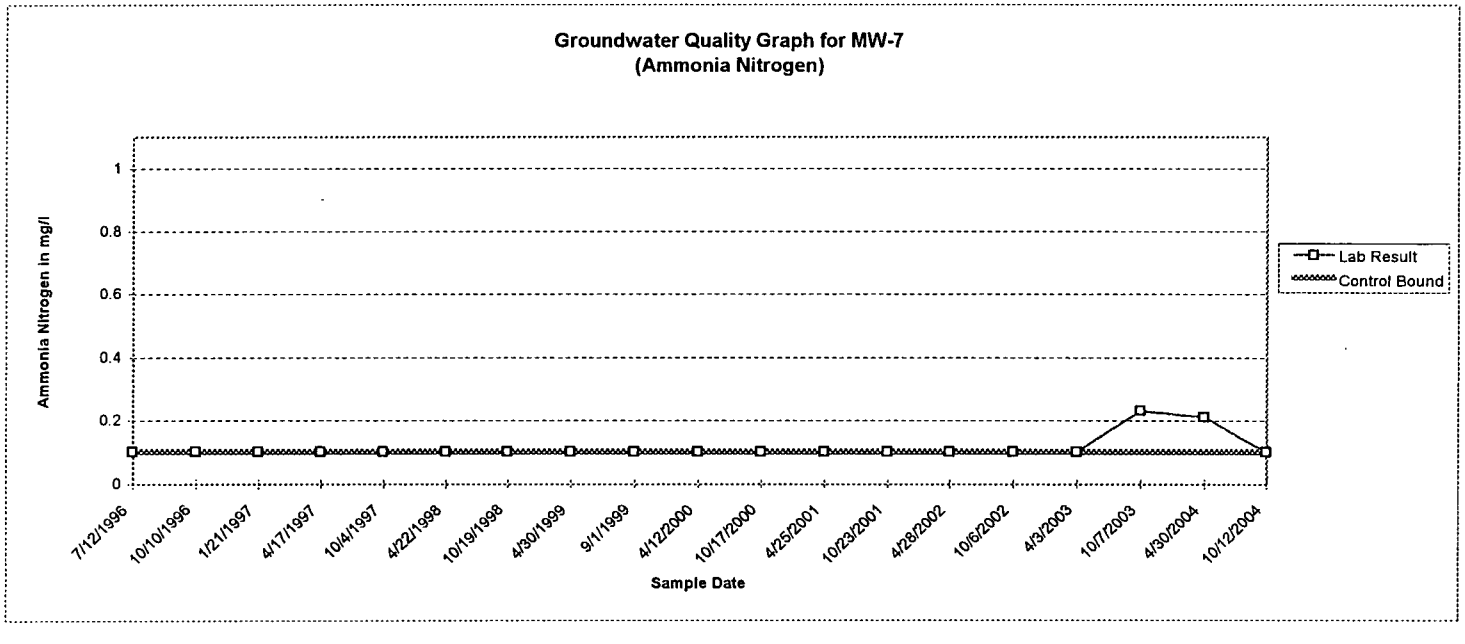
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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ANALYSIS SHEET MW-7

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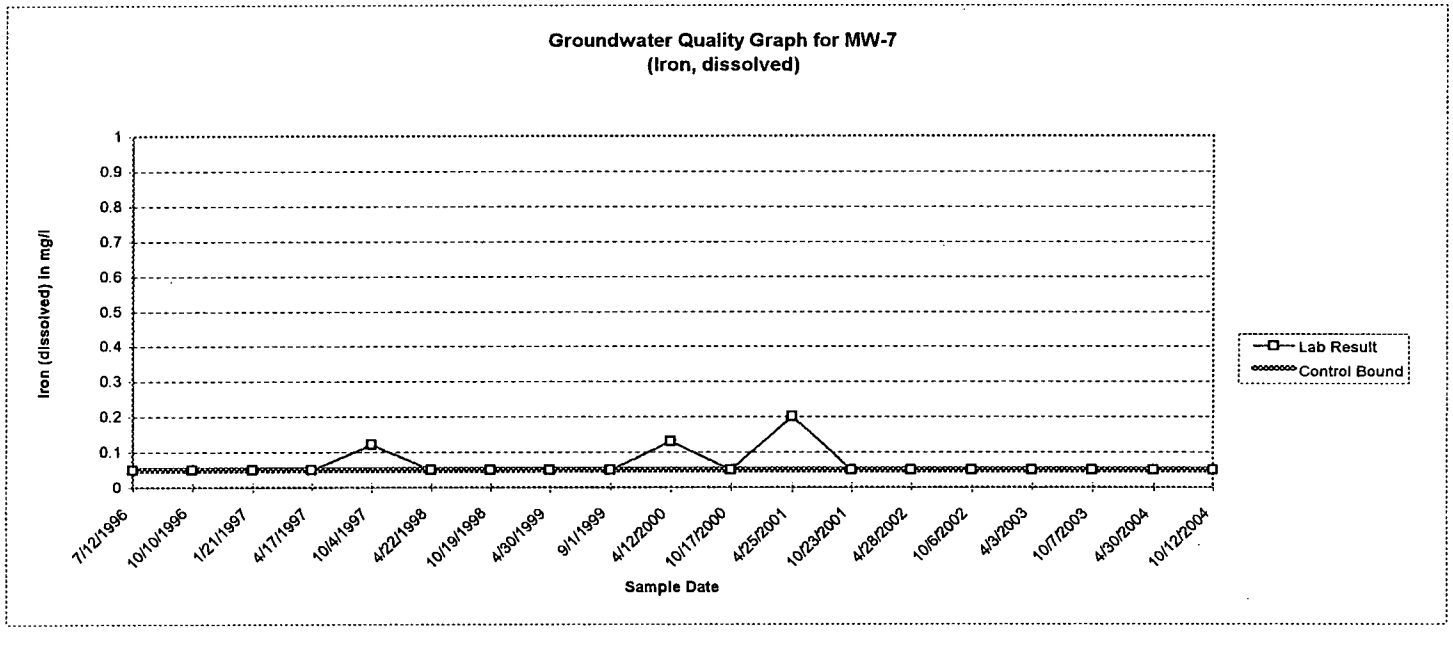
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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ANALYSIS SHEET MW-7

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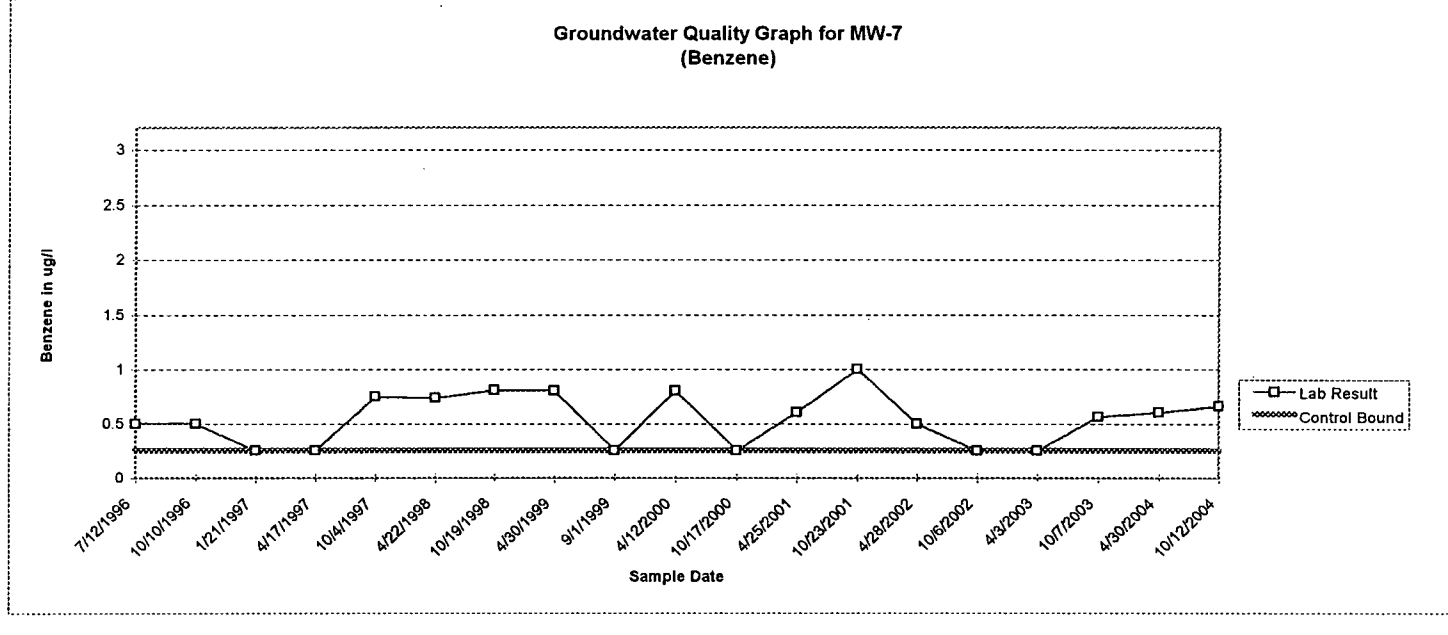
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



NOTE:
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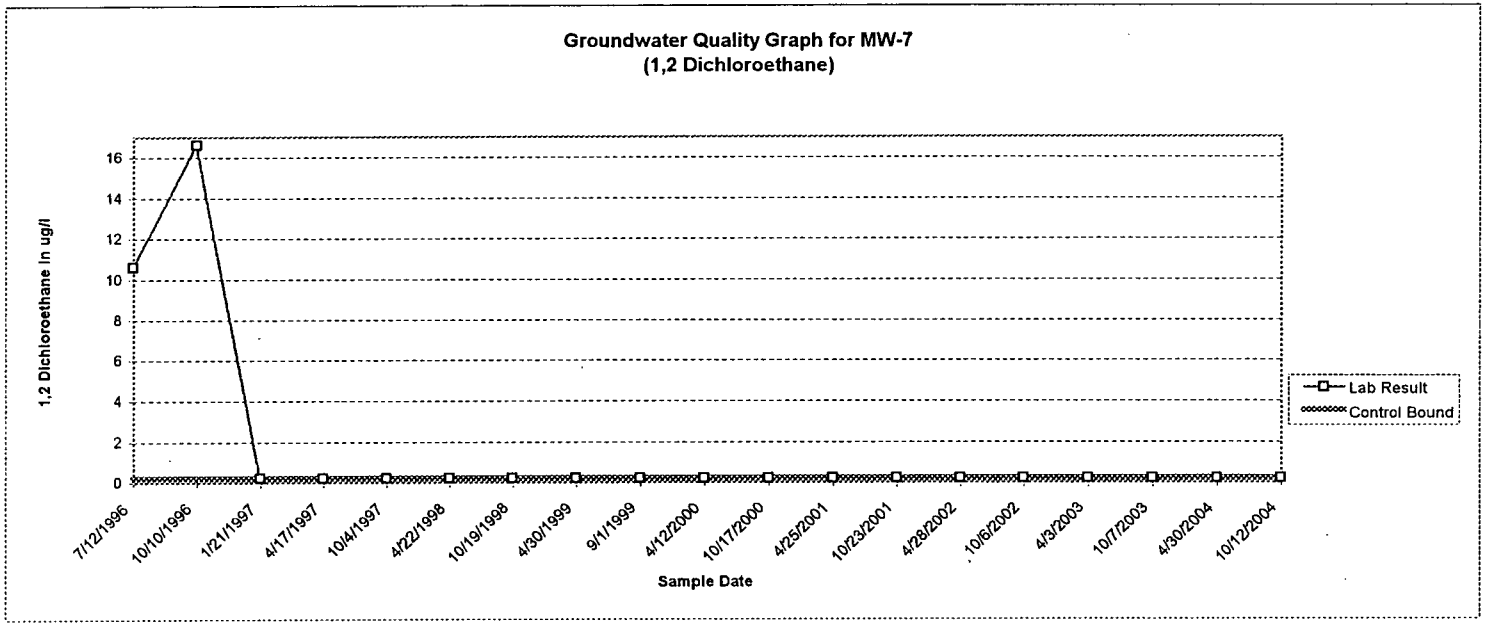
2) The same non-detectable concentration results for MW-17 resulted in a single control bound (i.e. there was no deviation from the mean of the data).
3) One-half of the MDL was plotted for non-detectable parameters.

ANALYSIS SHEET MW-7

PLYMOUTH COUNTY LANDFILL
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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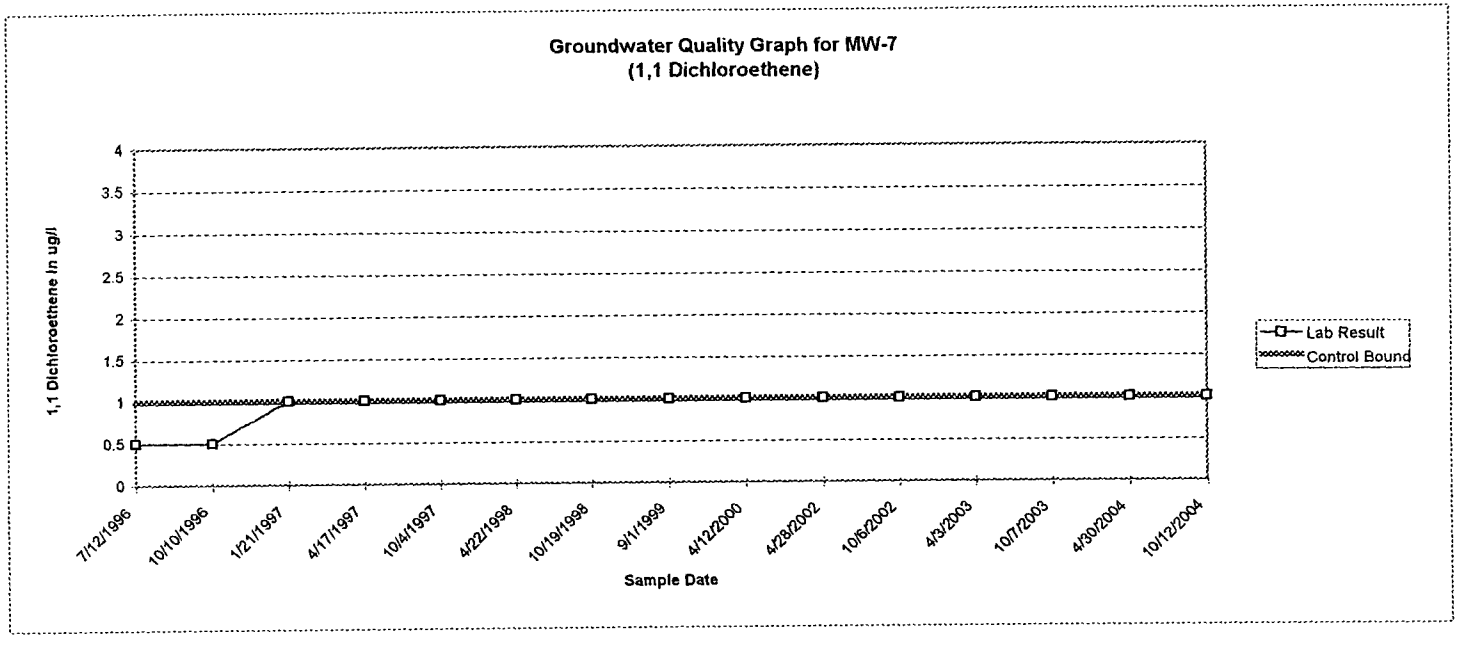
GROUNDWATER SAMPLING AND ANALYSIS
PROJECT NO. TERRACON 40905033

SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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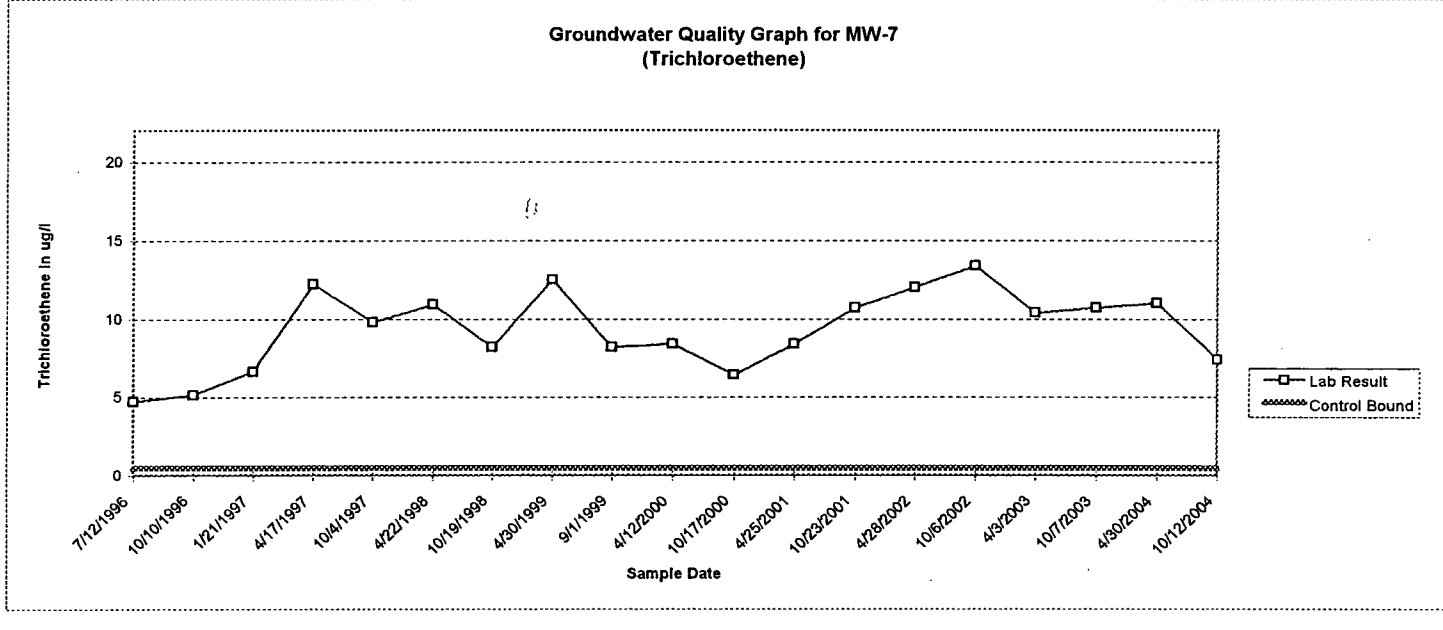

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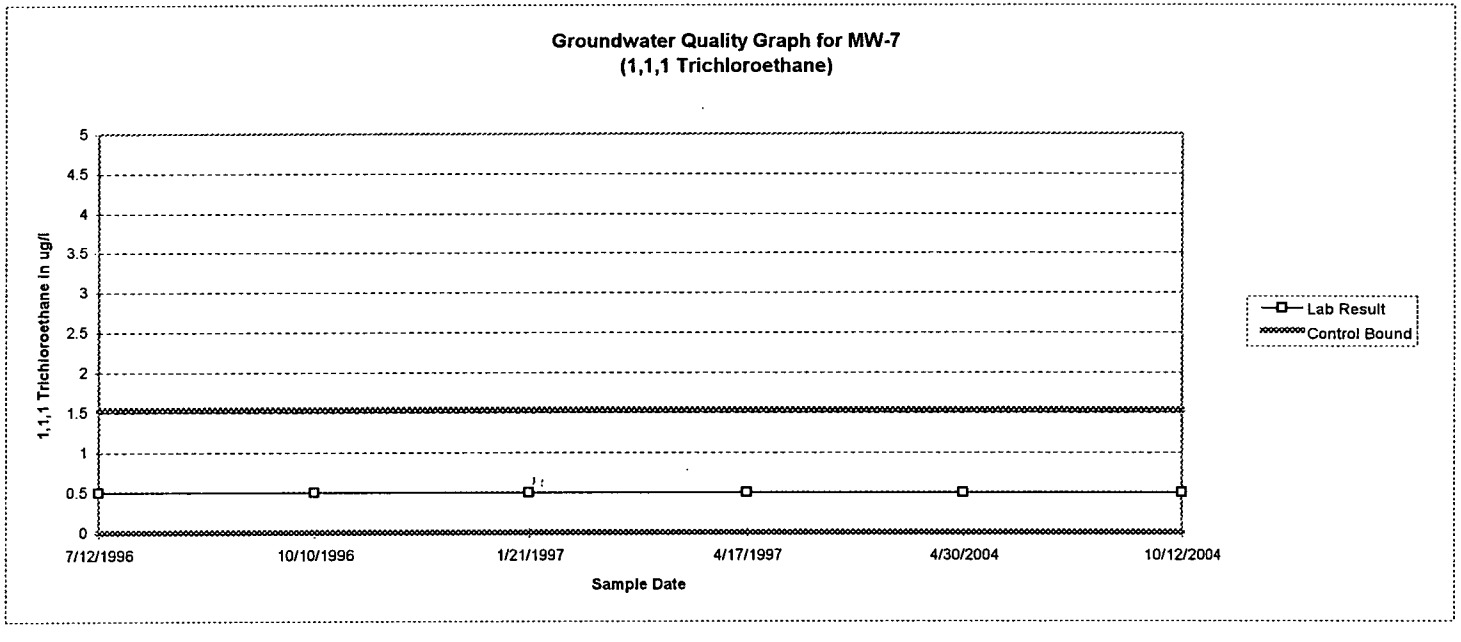

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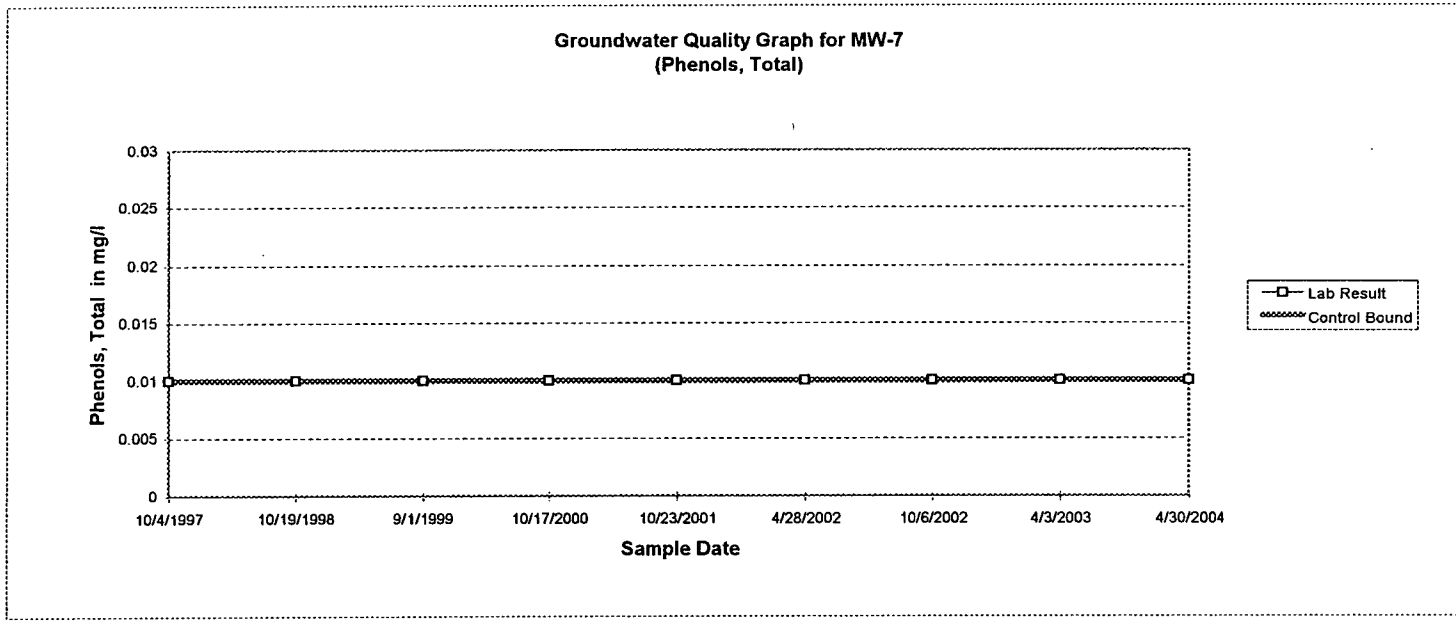
SEMI-ANNUAL, ANNUAL, AND SELECT VOC PARAMETERS STATISTICAL ANALYSIS SHEET



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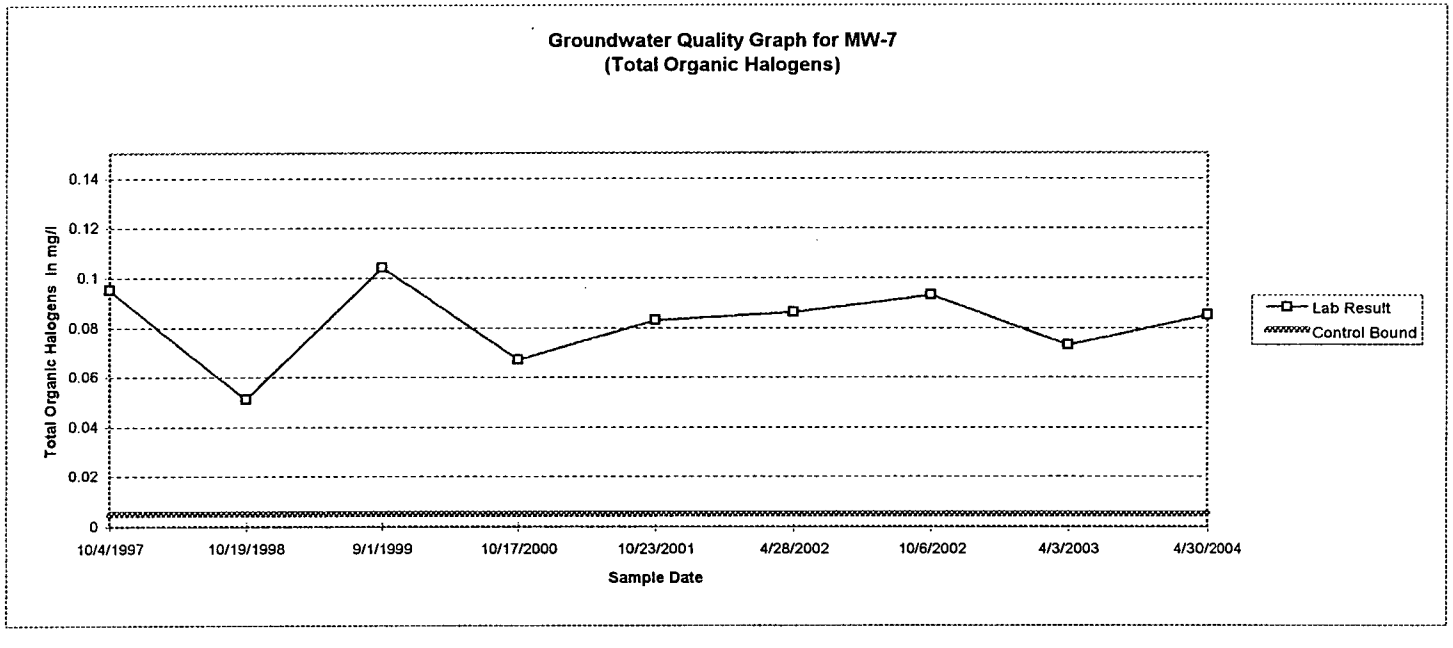

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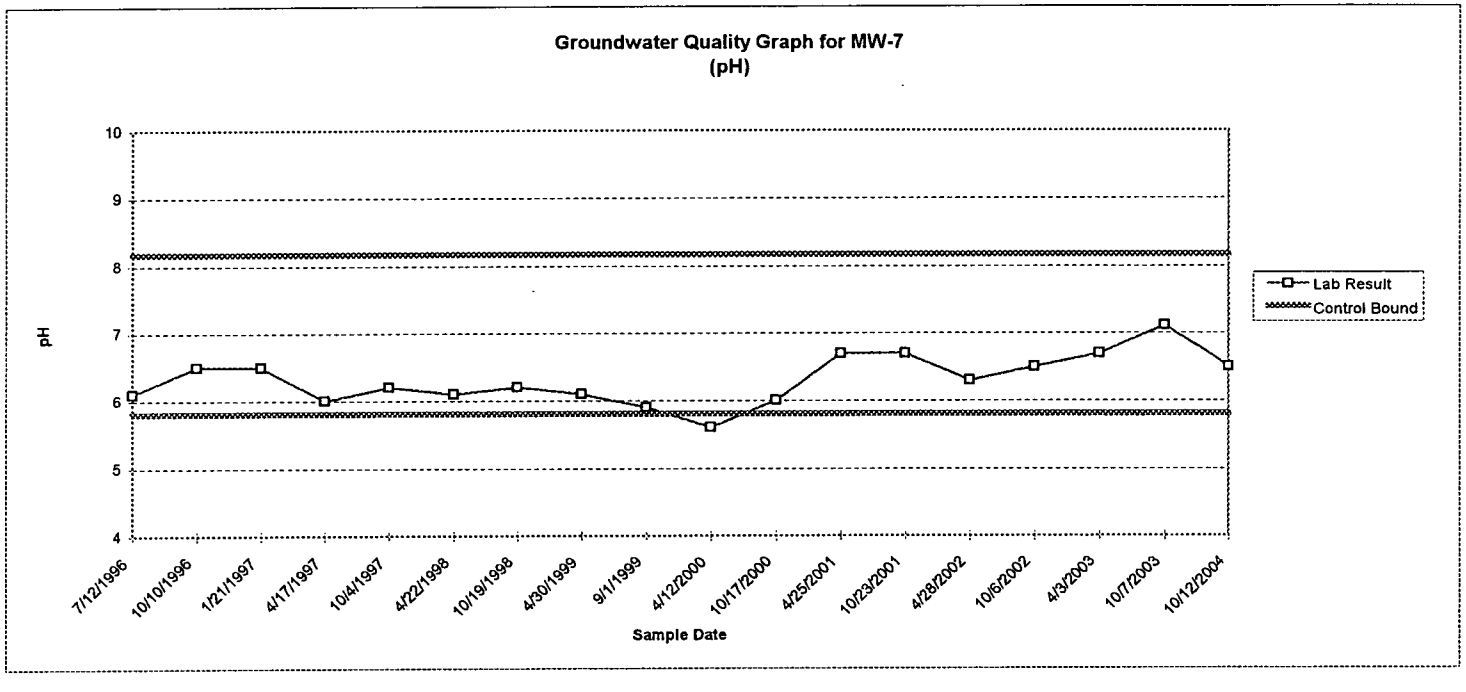

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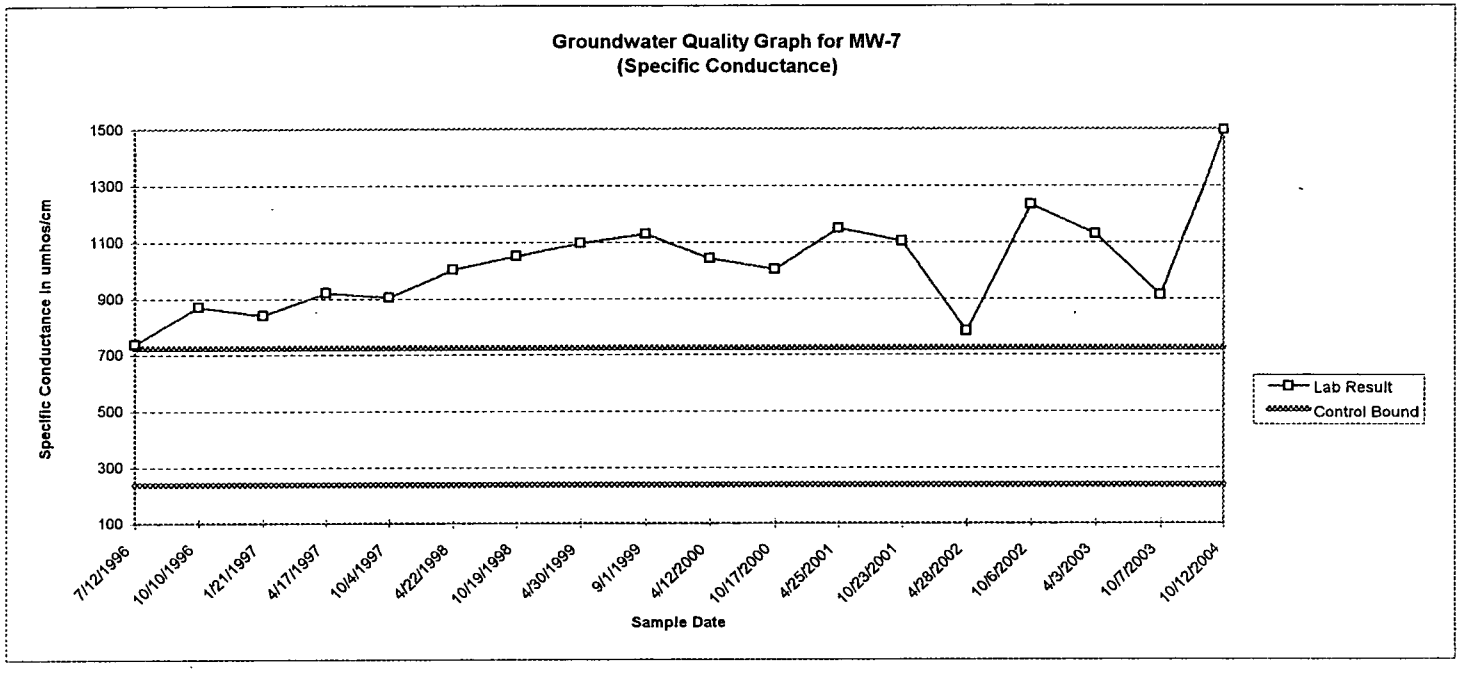

NOTE:
1) Results from Monitoring Well MW-17 (up-gradient well) were used to compute control limits.

TABLE 1
Plymouth County Landfill
Terracon Project No. 40905033

Appendix C

Summary of Groundwater Elevation Measurements

Measurement Dates			December 30, 2003		January 20, 2004		February 18, 2004		March 29, 2004	
Location	TOC Elevation (feet)	Screened Interval Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-7	1325.79	1303.4-1293.4	28.80	1296.99	29.18	1296.61	29.77	1296.02	27.67	1298.12
MW-8	1314.12	1296.7-1286.7	24.20	1289.92	24.34	1289.78	24.91	1289.21	23.85	1290.27
MW-9	1291.83	1277.1-1267.1	dry		dry		dry		dry	
MW-10	1264.66	1242.0-1232.0	31.20	1233.46	31.29	1233.37	31.52	1233.14	30.33	1234.33
MW-11	1285.62	1258.0-1248.0	32.68	1252.94	32.71	1252.91	33.20	1252.42	31.76	1253.86
MW-12	1333.20	1290.3-1280.3	45.37	1287.83	45.56	1287.64	43.80	1289.40	45.99	1287.21
MW-13	1266.67	1244.8-1229.8	28.53	1238.14	28.67	1238.00	28.40	1238.27	27.55	1239.12
MW-14	1302.41	1267.4-1252.4	47.27	1255.14	47.58	1254.83	47.94	1254.47	47.32	1255.09
MW-15	1322.16	1294.4-1279.4	34.18	1287.98	34.21	1287.95	35.69	1286.47	33.60	1288.56
MW-16	1330.02	1309.0-1294.0	31.91	1298.11	32.17	1297.85	35.93	1294.09	33.55	1296.47
MW-17	1319.12	1301.1-1286.1	22.13	1296.99	22.42	1296.70	22.34	1296.78	19.25	1299.87

NOTES:

TOC = top of casing elevation (feet)

Bold numbers represent water levels outside screened intervals

TABLE 1
Plymouth County Landfill
Terracon Project No. 40905033

Summary of Groundwater Elevation Measurements

Measurement Dates			April 29, 2004		May 24, 2004		June 29, 2004		July 29, 2004	
Location	TOC Elevation (feet)	Screened Interval Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-7	1325.79	1303.4-1293.4	27.10	1298.69	25.65	1300.14	22.90	1302.89	22.05	**1303.74**
MW-8	1314.12	1296.7-1286.7	23.22	1290.90	22.04	1292.08	19.38	1294.74	19.10	1295.02
MW-9	1291.83	1277.1-1267.1	dry		18.98	1272.85	18.89	1272.94	18.42	1273.41
MW-10	1264.66	1242.0-1232.0	30.26	1234.40	28.27	1236.39	27.13	1237.53	26.69	1237.97
MW-11	1285.62	1258.0-1248.0	31.34	1254.28	30.43	1255.19	28.60	1257.02	28.17	1257.45
MW-12	1333.20	1290.3-1280.3	45.98	1287.22	45.75	1287.45	41.27	**1291.93**	40.89	**1292.31**
MW-13	1266.67	1244.8-1229.8	27.50	1239.17	25.45	1241.22	26.10	1240.57	26.13	1240.54
MW-14	1302.41	1267.4-1252.4	47.15	1255.26	46.55	1255.86	43.35	1259.06	42.78	1259.63
MW-15	1322.16	1294.4-1279.4	35.04	1287.12	31.25	1290.91	30.72	1291.44	33.70	1288.46
MW-16	1330.02	1309.0-1294.0	31.98	1298.04	30.10	1299.92	24.70	1305.32	23.31	1306.71
MW-17	1319.12	1301.1-1286.1	19.31	1299.81	17.60	**1301.52**	17.65	**1301.47**	17.82	**1301.30**

NOTES:

TOC = top of casing elevation (feet)

Bold numbers represent water levels

TABLE 1
Plymouth County Landfill
Terracon Project No. 40905033

Summary of Groundwater Elevation Measurements

Measurement Dates			August 30, 2004		September 22, 2004		October 11, 2004		November 17, 2004	
Location	TOC Elevation (feet)	Screened Interval Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-7	1325.79	1303.4-1293.4	21.91	**1303.88**	20.69	**1305.10**	20.05	**1305.74**	20.86	**1304.93**
MW-8	1314.12	1296.7-1286.7	19.75	1294.37	17.50	1296.62	17.61	1296.51	18.30	1295.82
MW-9	1291.83	1277.1-1267.1	22.20	1269.63	20.01	1271.82	19.72	1272.11	21.35	1270.48
MW-10	1264.66	1242.0-1232.0	27.67	1236.99	26.55	1238.11	26.68	1237.98	27.39	1237.27
MW-11	1285.62	1258.0-1248.0	27.79	1257.83	27.88	1257.74	26.91	**1258.71**	27.03	**1258.59**
MW-12	1333.20	1290.3-1280.3	44.22	1288.98	44.25	1288.95	44.09	1289.11	44.11	1289.09
MW-13	1266.67	1244.8-1229.8	26.85	1239.82	24.89	1241.78	24.68	1241.99	25.00	1241.67
MW-14	1302.41	1267.4-1252.4	42.56	1259.85	43.00	1259.41	41.87	1260.54	41.78	1260.63
MW-15	1322.16	1294.4-1279.4	33.36	1288.80	33.27	1288.89	33.10	1289.06	33.15	1289.01
MW-16	1330.02	1309.0-1294.0	25.41	1304.61	23.55	1306.47	22.85	1307.17	23.70	1306.32
MW-17	1319.12	1301.1-1286.1	17.30	**1301.82**	15.23	**1303.89**	15.31	**1303.81**	16.48	**1302.64**

NOTES:

TOC = top of casing elevation (feet)

Bold numbers represent water levels

TABLE 2
Plymouth County Landfill
Terracon Project 40905033

Summary of Leachate Measurements

Location	Measurement Dates											
	Dec 30 2003	Jan 20 2004	Feb 18 2004	Mar 29 2004	Apr 29 2004	May 24 2004	Jun 16 2004	Jul 29 2004	Aug 30 2004	Sep 22 2004	Oct 11 2004	Nov 17 2004
LW-1	3 inches	3 inches	3 inches	3 inches			8 inches	9 inches	9 inches	10 inches		7 inches
LW-2	5 inches	5 inches	5 inches	5 inches			12 inches	15 inches	11 inches	11 inches		11 inches
LW-3	9 inches	9 inches	9 inches	9 inches			60 inches	65 inches	52 inches	72 inches		65 inches
LW-4	3 inches	3 inches	3 inches	3 inches			1 inch	1 inch	1 inch	1 inch		1 inch

NOTES:
Leachate levels measured by landfill personnel.
Blank fields indicate no data.
Values represent leachate thickness at bottom of leachate well.

TABLE 3
Plymouth County Landfill
Terracon Project 40905033

Summary of Hydraulic Conductivities

	MONITORING WELLS										
DATE	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17
March 1991	2.00E-04	9.70E-06	1.40E-04	8.90E-06	6.10E-04	5.30E-05					
May 1998	1.78E-04	3.33E-05	3.81E-05	4.50E-03	3.89E-04	3.30E-05	1.43E-04	1.31E-04	5.31E-05	9.23E-06	1.29E-05
November 2003	1.34E-04	1.09E-05			3.31E-04	1.83E-04	2.96E-04	1.94E-04	5.26E-05	2.88E-05	9.63E-06

Hydraulic conductivity values given in units of centimeters per second (cm/sec).

Blank cells indicate no testing was performed.

Wells MW-13, MW-14, MW-15, MW-16 and MW-17 did not exist at the time of hydraulic conductivity testing in 1991.

Wells MW-9 and MW-10 had insufficient water for hydraulic conductivity testing in 2003.